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Failure to Install Fixtures on a Par With the Furnishings a Serious Setback to Gas Lighting

Factory Office Lighting a Particularly Promising Field—Going After It in Providence Makes Keeping Enough Stock on Hand to Provide for Appearances a Problem

By J. E. BULLARD

"People," said Edward W. Coit, manager of the Welsbach store in Providence, R. I., "will put a thousand dollars' worth of furniture into a room where there is a two-dollar gas fixture. Of course, gas lighting under such circumstances is not satisfactory. Against such a background, the fixture looks a great deal cheaper than it really is. The man selling gas lights and gas fixtures must do all that he can to prevent such occurences if these people are to continue to use gas lighting."

In these words, Mr. Coit emphasized one of the great weaknesses that have been connected with gas lighting in the past. The equipment used has not been good enough. It has not been decorative, and regardless of whether the people were satisfied with the light itself or not, they were inclined to turn thumbs down on gas lighting because the fixtures were not in harmony with their furniture. Very often they installed electricity, not because they liked electric lighting, but because they liked the electric fixtures.

Considerable Now Beyond Reach

This condition of affairs has already placed considerable residential lighting beyond the reach of the gas man. Houses have been built and fully wired for electricity, but the gas piping has been left out of every room but the kitchen. Since electricity is giving fairly good results these people will not consider the expense and the inconvenience of having their houses piped for gas. In addition they have a goodly sum invested in electric fixtures which also deters them.

Much of the most desirable residential lighting, therefore, has already passed out of the reach of the gas man. Had expensive fixtures been sold to these light users in the beginning, these expensive fixtures alone would have held the lighting.

Of course this rule does not apply with as great force to store lighting. The progressive storekeeper is inclined to change his lighting system periodically whether or not his fixtures are expensive. In fact, many a merchant does not like to make large investments in lighting fixtures, because he knows that in a few years these fixtures will look out of date and he will want new ones. Nevertheless, the more expensive the fixtures installed the more permanent will be the installation, provided the storekeeper has bought and paid for the fixtures.

Look Well to the Factory Office

There is one other place, however, where it proves as great a mistake to install cheap gas fixtures as it has proven in the residence. This place is in the factory office. A gas light that may give the greatest satisfaction in the shop, may not prove satisfactory at all in the office. In the shop the lighting problem is far different from that in the office. The shop lights are used to illuminate the work that is being done. They are surrounded by machinery and in most cases the light is as attractive if not more so than the machinery and the work benches.

In the office, however, we have a different condition. Some offices are fitted up with expensive and attractive furniture. The offices can be and are kept cleaner and more attractive than the shop. The lamp that looks well in the shop, therefore, looks as much out of place in the office as would a coal-fired steam boiler.

It is a mistake, however, to make no attempt to light the office. In practically every case, gas lighting is materially cheaper for the factory office than is electricity. It also will give far better lighting effects if used with care.

Experiments in office production have pretty well demonstrated the fact that it is not economical from a cost of production point of view to use drop lights. These light the office in spots and prove more tiring upon the eye than a uniform illumination of an intensity which gives ample light for doing any sort of work that must be done in the office.

Good lighting, therefore, does not require drop and extension lights such as were used in the early days of electricity. What it does require is a suitable number of properly designed and properly spaced lighting units hung well up towards the ceiling. This means that gas lighting can fill the requirements as readily as electricity.

As a matter of fact, gas lighting can fill the requirements much better than electricity. In far too many offices the ventilation is not as good as it should be. Often these offices are crowded and when electric lighting is used the air becomes stagnant unless electric fans are used with which to stir it up. Usually, however, fans are not used unless the weather is hot. It is considered a waste to use them in winter.

The gas lamps create enough heat to set up and keep going gentle currents of air. These currents prevent the air from becoming stagnant, and keep that near the floor much purer than would be the case if no such currents were set up. The gas burners also serve to cremate a certain portion of the poisonous products exhaled by the breathing of the occupants of the room.

From a health viewpoint, therefore, gas lighting is the proper form of lighting to use in the office. It is better for the eyes of the worker and it is better for the health of the worker. Because office workers are not exercising their bodies to the same extent that the average factory worker is exercising his, it is more important to guard the health of the office worker than it is to guard the health of the factory worker. The office worker is not so likely to be able to combat disease germs as is the factory worker whose manual work gives him the exercise that keeps his blood circulating and his organs functioning in a strong healthy manner.

There is no place where light is used where it is certain to show a greater economy over electricity than in the factory office. In many cases, light is not used for long hours in these offices. It is not used, for example, for as many hours as it is in the store. Most factories also use gas. If there are discounts offered by the gas company for quantity consumption the factory earns these discounts. Unlike electricity gas is usually sold for all purposes at the same rate. That is, if the factory is using gas for furnaces, it may use gas for lighting from the same meters, all the gas being delivered to the consumer at the same pressure.

Why the Big Use Discount Does Not Take in Electric Lighting

In the case of electricity, one voltage may be used for power, another for heat and still another for light. If that is the case, each voltage will be sold at a different rate, light being sold at the highest rate. The lighting current may cost ten cents, though the power rate is only two or three cents per kilowatt hour.

If all the electricity is sold at the same rate, it will all probably be sold at the same voltage. Large users, for example, often buy it at 2,200 volt pressure and install their own transformer for stepping it down to the voltages required for different uses. In such cases, the current is sold on a demand charge basis, and if the electric lighting increases the demand, the actual rate paid for the lighting may be greater than would be the case if the lighting was purchased directly from the electric company. In any case, the lighting rate for office lighting is pretty sure to be high if electricity is used.

The case, therefore, looks very strong for gas lighting in the factory office, yet we find office after office lighted with electricity though the factory may be using gas lighting. The reason, as has already been pointed out is the effect which we get when we hang two dollar fixtures in a room with a thousand dollars' worth of furniture. The fixture looks out of place. Even though the fixtures are high grade and perfectly satisfactory in the factory people don't like to have factory fixtures in the office.

It was after he had pondered over these facts that Mr. Coit, of Providence, decided that there was a good opportunity for selling semi-indirect gas fixtures to factory offices.

Providence, as everyone knows, is a big jewelry center. Many of the factories located there have no other offices than those connected with their factories. They do all of their business under one roof. This gave a good opportunity to try out the idea.

Accordingly he began work with the offices in these factories and the results have exceeded expectations. He has found that there are many opportunities for selling gas lighting to factory offices that have been overlooked. Such selling also tends to increase the sales to the homes. If the people in the office can be converted to gas lighting they will want the same sort of lighting in the home. If they do not find gas lighting satisfactory in the office they are not likely to want it in the home. And, of course, the same rule holds in the case of electricity.

Possibly it was his factory office lighting campaign that has increased business in the store at such a rate that it has been hard to keep enough stock on hand to fill orders. In fact, this has made the store resemble the salesroom of a very popular automobile when the factory is several months behind on its orders.

Gas Turbine Research

There has recently been much discussion of the use of oil fuel in ships, but there is one real difficulty in its application. As it is inadvisable to put more than 200 hp. in any one cylinder, a 100,000-hp. battleship would require, say, fifty Diesel engines of ten cylinders each. Such a "monstrous regiment" is outside a reasonable purview. If, on the other hand, oil is burnt under a boiler to raise steam, only about 14 per cent is achieved instead of 30 to 35 per cent of the Diesel oil engine. The solution is the gas, or rather the oil, turbine. That is to say, a turbine which uses oil fuel and in which the thermodynamic cycle approximates to that of the Diesel engine. The advantage of all turbine systems is that the power can be largely increased with but little increase in the size and weight of the plant. The advantage of the oil engine is in its high thermal efficiency. The oil turbine should combine these two advantages

The pioneer of the gas turbine was Armengaud, working in Paris in 1904. In 1911 Holzwarth built his 1,000-hp. turbine at Mannheim. Neither of these experimenters were wholly successful. Dr. Garuffa, of Milan; Armengaud, Lemale, Karavodine, Ventou-Duclaux, Hoizwarth, Stodola and Garuffa are all thinkers and experimenters on the gas turbine, but there is no American or Englishman in this company. The difficulties to be overcome in the making of a successful gas or oil turbine are great, but they are all practical difficulties and therefore soluble.

Gravity of Coal Situations Predominates All Problems in European Gas Supply

Gas Progress Abroad — A Review of Foreign Conditions — Gas Economizers that Did Not Economize

By L. W. ALWYN-SCHMIDT

The European gas industry stands at the present time under the sign of the coal shortage. The coal production, which has remained fairly satisfactory all through the war, has suddenly shown signs of complete failure, and there is at the present moment no sign of an increase. No country is entirely free from this phenomenon, and gas men all over Europe are wondering how they will be able to pass through the coming winter without a serious curtailment of the gas production.

At the bottom of the whole problem, of course, is the ever alive labor question.

Labor does not only demand higher wages, which might be conceded, but labor has begun to reduce production systematically.

In England, for instance, the output of one miner was estimated to be 294 tons of coal in 1907. It had declined to 214 tons in 1918, and is expected to fall below 200 tons under the new reduction of working hours. This all happens in the face of ever-increasing mechanical aid to production.

Next to the households the gas industry, no doubt, is the heaviest sufferer from this condition, although great efforts are being made to give to the public utilities all the coal they require for their operation.

Giving up the hope of a near remedy of the coal supply situation the gas works are again considering the possibility of rationing the consumers of gas and reducing in this way the demand.

The question has found full consideration during a recent meeting of the North British Association of Gas Managers. It appears from the principal address of that meeting that the operation of the gas rationing order has caused more trouble and annoyance to consumers and management than anything else in the nature of control. These regulations have now been modified, and the speaker expressed the hope that they would go entirely.

Considering present conditions, however, it is very doubtful whether a removal of the control will be possible.

Increase Is Unaccounted For

There is in this address much of interest to the American reader. We are now going through the aftermath of a period of price control, and the general experience seems to be that whatever prices have been controlled, the removal has been followed by a rapid increase of the cost of the controlled commodity.

Gas seems to make an exception.

At least it is claimed by the gas men in England that the high prices for gas would not have been necessary if the Government would have permitted the gas works to make full use of the commercial possibilities of the by-products including coke.

In the case of coke, for instance, the gas works were compelled to sell it much below its commercial value with the result that the increased cost of producing gas was thrown entirely upon the gas consumer who had to pay for the savings of the coke consumer. The same applies to tar products and sulphate of ammonia.

Governmental control of production often works arbitrarily. While it may be of distinct advantage in one case it is just as often detrimental in another. So in England much sulphate of ammonia was wasted by the restrictions put by the Government upon certain contractors which were only permitted to make sulphate for agricultural purposes.

As not all gas works had sulphate of ammonia plants, much time was spent in getting the equipment. Another matter finding attention in the report is the quick deterioration of the gas meters during the war. Nearly all English gas companies have had an increase in unaccounted for gas consumption, and it is said that there was never a period in England where meter troubles have been so frequent.

The position of the English gas company with reference to meter troubles is rather peculiar. If a meter is suspected to be faulty the meter is withdrawn and tested. When found faulty an attempt is made, as a rule, to charge for gas at the rate of last year's consumption. English law courts, as a rule, have been willing to support such a charge. If the consumer, however, is obstinate and raises objections which put the statement of the gas company in doubt, the latter has no leg to stand upon and faces the loss of the case. Nothing, however, is more detestable to the company, so it tries immediately to arrange with the consumer. In 90 out of 100 cases the result is a financial loss to the company.

So meter troubles are not exactly welcome, and when frequent, like during the last years, are a perfect nuisance. The deterioration of the gas caused by the necessity of the war seems to have been the principal cause, and troubles were mostly met in dry meters. The shortage of fitters and lack of new meters added to the difficulty, and losses have been frequent. A demand is now voiced for a change in the construction of the dry meters so as to make them more suitable for present day gas.

Curtailing on Service

The delay in meter supply and the high cost of fitting them have nearly abolished again in England the liberal policies followed in this respect formerly by the gas companies. Before the war most companies had inaugurated a brisk campaign for the retention of gas as a lighting source.

Service was rendered in most cases free, and even the material was charged only in part. So some companies would give lighting fixtures and stoves to consumers. Others would make the pipe installations at their best, while nearly all repairs were free.

Now a sad change has come. With materials mounting up, our labor clamoring for ever higher wages, it is impossible for the gas plants to do all that as before, and charges have to be made.

During the war no detrimental effects have resulted from this policy, but now with the return of peace there is a danger that the business of the gas companies will suffer.

True, at the present time no serious competition can be expected from the part of the electric light companies. Gas men, however, are studying the situation most carefully in the hope of finding a solution. There is no doubt that many gas companies will attempt to take up again their pre-war service plans as soon as this becomes possible through a more favorable situation in the labor and material market.

The Prospects for By-Products

The study of the use of by-products is by no means exhausted yet. New vistas open the more it is expanded in all its possibilities. In England just now a proposition is made to put to further use the waste heat escaping at present during the process of gas making. As matters stand this heat is of no particular usefulness to anybody to-day, but there is the corresponding fact that most gas works burn a great deal of coal for purposes not directly connected with gas making.

With the coal condition being where it is, it appears that such an outside consumption of coal is more or less a form of waste that should not be permitted. The proposal, therefore, to use it for the heating of the boilers is not so entirely amiss. It is only another step in the direction of developing all the latent resources of the present gas plant.

That a technical solution of the problem can be found, thereabout does not seem to be the slightest doubt. Our engineers should find it comparatively easy to design machinery for collecting the escaping heat and leading it to the point of utilization. There is some discussion as to whether the power originated in this manner might not be employed advantageously for the purpose of creating electrical energy. Whether this should prove possible must, no doubt, depend from the extent of the power that can be generated in this manner and the cost to the undertaking.

Of similar character is another proposal concerning itself with the complete utilization of coke by the installation of a supplementary water gas plant. The problem in this case is not only of technical but also of economic character. The production of coke renders the existence of the gas industry of particular value outside its services in the way of lighting and heating. Whether a water gas plant would be advantageous, therefore, would have to be decided entirely upon the strength of each individual case.

The following questions deserve preliminary consideration. Is it more economical for the gas plant to sell the coke or to turn it into gas? Are there strong economic reasons why the coke should be sold to consumers requiring it urgently even if the conversion into gas should be more profitable? Gas managers have to decide these points not as the managers of an industrial enterprise, but as high spirited public servants. The answer must be left to each individually.

The Situation in France

France is now busy in cleaning up from the war and getting her economic life back to a peace footing. The French gas industry has had its full share of troubles during the last five years which in the case of Paris were aggravated by frequent German air raids.

Paris was a dark town after August, 1914. Before that date Paris required nearly 70,000 burners for public lighting. After the first raid these were reduced very rapidly, and one year later were left only slightly over 20,000 lights of which 7,000 only were permitted to burn after 10 p. m.

Later in the war the French gas engineers took heart. They studied lighting effects, and with the aid of airplane inspection it was discovered that blue chimneys would hide the lamps sufficiently against vision from above, while giving a fair amount of light in the streets. So blue chimneys were fitted to the gas lamps, and more burners were used.

Another cause of trouble was provided by the bursting and subsequent ignition of gas mains following bomb explosions. The Paris gas main system covers approximately 675 miles, and to break it up completely by manholes would have meant the boring of 15,000 holes, an entirely impossible undertaking under the prevailing circumstances.

It was, therefore, decided, to break up the system down to 12-in. mains by 610 shafts in addition to a number of similar control shafts of a smaller number leading already to the high pressure mains.

These shafts were left open, the pipes were laid bare and cut to the point of piercing. If the necessity arose, the pipe could be broken completely and plugged, thus isolating the remaining section.

It is contemplated to retain part of this isolation system.

The gas lighting system of Paris is now again in full operation, granting, of course, always the limitation put upon it in the matter of coal and labor.

The principal problem now ahead of the French gas industry is rather of an economic than of a technical character. Before the war the French gas works bought by far the largest part of their coal from England and only a minor part from French mines. The English coal was carried to them mostly by way of one of the ports, and from there by rail to the destination. The war now has disorganized completely this source of supply and England may not have sufficient coal to give to France.

France on the other hand has acquired the very rich coal mines of the Sarre Valley, superior in every way to those destroyed by the Germans in the north of France. To make this new source of coal, however, fully available it will be necessary to France to link up the Sarre Valley with the rest of France in such a manner as to permit the cheap transportation of the new coal to the consumers. The attempt may prove rather costly to France and it may easily turn out that the French gas works will pay more in the future for their coal than in the past, allowing even for the comparative rise in the cost of production all over Europe.

Gas Rates Higher

Labor conditions in the French gas industry appear to be not better and also not worse than in any other European country. There is an apparent lack of trained operatives. Gas rates are higher to-day in France than before the war. It is, however, doubted whether the limit of cost increase has been reached yet.

The situation in Germany is still shrouded in mystery. There is no doubt that the German gas industry has kept its head well over water during the war; it seems, however, to have gotten its most serious hurts during the complete disorganization of all German industrial effort following the signing of the armistice.

Technically, the German gas industry has occupied itself during the war principally with the alleviation of the most oppressing effects of the coal shortage and the blockade. Like most other German industries it has tried to get along with as little consumption of copper and other imported raw materials as possible, the result of which seems to have been a gradual but far reaching deterioration of all permanent equipment.

Open burners have been abolished and have been replaced by incandescent lighting.

For a while the principal problem of the industry was: How to effect best a reduction in the consumption of gas so as to assist in the preservation of coal, and also how to make the consumption of gas as large as possible in order to permit the industry to supply the much desired by-products of gas.

That the problem has never been satisfactorily solved does not require any telling.

The various attempts that have been made in one or the other direction, however, have given many valuable hints in gas management and in the technical handling of gas plants that may come very handy in future.

Government interference, like in the case of England, seems also to have been at the bottom of much avoidable trouble in the German industry, and it is not at all doubtful that the gas engineers if left alone might have done better in many respects.

With the war over the German gas industry is now busy to draw the balance and to see how it will be situated in the future. It has lost a large part of its former coal resources, and the coal situation remains very precarious in Germany with a six-hour day of the coal miners and a more or less broken down transportation system.

It is noted, however, that the coal trains run fairly normal and that during the coming winter at least no serious trouble is expected to arise from this source.

Saving is not always a very wise procedure, especially if it is overdone in one or the other direction. German efficiency has not been entirely free from that complaint, and after an experience of more than five years the German gas men are peculiar experts to speak upon that subject.

It has been found, for instance, that the many gas savers which have been fitted to gas burners during the war to be used in the off hours when pressure was reduced have not proved always as valuable as had been expected by their makers.

The principle involved in most of these appliances was that of creating additional pressure upon the burner by adding air to the gas or by using air pressure. Experience has shown that in nearly all cases these appliances cause not only an increase in the lighting power of the burner, but also in the consumption of gas. While the first was highly appreciated the second result was not, which has led to the discontinuation of the appliances.

When the revolution came in Germany there came also an end to all normal industrial life, at least for a number of days or weeks. The life of the gas plants and the gas consumers then was precarious, and it was never quite possible to say when and where gas would be cut off. This period, however, passed comparatively quickly.

Gas managers, however, are said still to complain about the lack of interest and discipline shown by the workmen of the industry. Men will turn up for work or they will not.

If unemployable they find it to their advantage rather to draw unemployment pay, and they are therefore not overkeen to take a job. On the other hand, it is said that the gas works in the smaller cities have settled down early to normal production, their only care being at the present time the regular supply of coal which is not dependent upon their own exertions.

The war has been the incentive to many new ideas in gas production, not all of which have been made known yet. We can expect, therefore, doubtless during the next few years a stream of interesting technical disclosures that will be of great value to the gas industry in general.

Safety Hints for the Gas Industry

While soldering a meter case some hot metal splashed into a workman's eye, causing a blister. Goggles would have prevented this accident.

A workman while pulling hot coke from a retort with a hoe dislocated his shoulder. The safest way is the easiest way. This workman probably stood in an awkward position, thinking it the easier way to work.

Two men were shoveling coke into a machine when one of them struck the other over the eye with the handle of his shovel. Another example of careless practice, which might have resulted in the loss of an eye.

In taking down a pipe line a workman rested his ladder against the pipe he was disconnecting. Pipe, ladder and man fell to the ground. Simply a case of "nobody home." This workman never stopped to think what he was doing.

A workman was tightening a nut on a stoking machine in a retort house when the wrench slipped and caught his finger between it and an angle iron. He failed to report the injury until two days later. If more care had been taken to make sure that the wrench fitted the nut and was placed correctly, this accident would not have happened. Failure to report the accident promptly might have resulted seriously.

While emptying the contents of an acid-soda fire extinguisher it exploded and injured the workman on the chin. Taking off the cap of the extinguisher and removing the bottle of acid before emptying the soda container would have prevented this accident.

A workman was standing on a scaffold when a board broke, causing him to fall to the ground. More care in seeing that the scaffold was safe would have enabled the workman to work during the entire month he was disabled.

A pinch bar lying overhead fell and struck a workman on the head. Tools should not be left where they are liable to fall on anyone working below.

In trying to open the dump on the bottom of a coal car a workman jumped on the wrench, which slipped and caused him to fall to the ground, injuring his back. Good judgment would have saved this man from a painful injury.—*J. B. Douglas, Accident Prevention Committee.*

When Appliance Sales Efforts Decrease There Is a Decided Decrease in Use of Gas

When the Appliance Salesman Is Tramping His Rounds, When the Gas Company Sales Copy Is Filling the Newspapers and Mail Boxes, Then the Meters Hum in Harmony

The gas output curves of some hundreds of gas companies have been gone over and carefully analyzed and have shown variances of from 31 to 95 per cent between the lowest and the highest months' output. The peak months of the Northern companies include September, October, November, December and January, while the low months almost invariably are February, March and April. Peaks in the smaller Northern companies almost invariably come in September and October, while in the larger companies, in both the North and South, they occur in December or January. The larger companies show a gradual falling off from January and begin to pick up in September. The smaller companies of the North show their highest mark in September and fall off gradually until the bottom is reached in March, when they gradually pick up and show their peak again in September.

The above figures have been taken over a period of five years and the characteristics shown above appear each year, declared the report of the Sub-Committee of Sales Development Committee on Filling in the Valleys in Gas and Appliance Sales of the American Gas Association.

The larger companies, whose peaks are in December or January, are those companies which invariably have pushed the gas lighting business and have more or less house-heating business in room heaters, gas steam radiators, etc., but their curves do drop off after January, which means that coal is being substituted in February, March and April.

In the smaller companies coal is being largely substituted, in the colder months, for gas as a fuel. The peak being reached in September shows that people coming back from summer vacations use their gas ranges and gas water-heaters until the cold weather begins, when coal is used. The smaller companies show almost invariably a greater output during the warm months of the year, and the larger companies show about an even split between warm and cold months of the year. We have taken, as a basis for this analysis, November, December, January, February, March and April as the cold months, and as the warm months, May, June, July, August, September and October.

This committee realizes that the ideal gas output curve would be an even line across the chart with a gradual upward turn, and it is fully aware that weather changes have a great influence on the day's output. What the committee is trying to suggest is a series of plans that will help gas companies show peaks during the cold months rather than the warm, whether these companies be large or small, and the advisability for all gas companies of filling in their valleys of gas and appliance sales.

Gas is a fuel. Fuel is needed for heat—to overcome cold. Therefore, should we not sell more gas in the cold months than in the warm months?

Whichever way we turn, gas company men buck up against the old-fashioned, dirty, and inefficient competitor—coal. In the smaller companies gas ranges and gas water-heaters give way to coal ranges, particularly in the cold season, and we believe that this substitution is caused by the following facts:

First.—The methods of buying coal are different from those for buying gas.

Second.—The methods of paying for coal are different from those of paying for gas.

Third.—The customer rarely knows what his coal is actually costing him per month.

Methods of Buying Coal *vs.* Gas

In the spring of the year most coal dealers begin to drum up the next winter's business, and generally get their customers to put in, in the spring, the next winter's supply, allowing them four or five months in which to pay for the coal.

Then the cold season starts, and people begin to use their coal, for which they have already paid, and use it for the rest of the winter without being reminded as to its cost per month. In comparison, when gas is purchased, it is paid for at the end of every month, thereby keeping the consumer in touch with his month's gas bill. Gas company men, themselves, are not fully aware what their coal costs them per month in their own homes, and many of them have been amazed when they sat down and figured this out. Consequently, it is obvious that our customers must be unaware as to the real monthly cost of their coal during the winter, as compared to what gas would cost for the same results.

This committee most emphatically declares that it is the ignorance on the part of both the customer and the gas company men as to the above facts that makes the peaks and valleys so far apart in their gas output, and which is the reason for the smaller companies selling less gas in the wintertime than in the warm months of the year. In the larger companies, where the peaks are in December or January there is a decided falling off in February, March and April, while later on, in July, August or September, the output curve begins to go up. This shows conclusively that, in these months of July, August, September and October, which are warm months and also light months, the increase in output is due to gas ranges coming on to the line, and the dropping off from the previous December or January was caused by the gas ranges and water-heaters going off the line.

This committee contends that companies should sell more gas for lighting and cooking in the colder and darker months of the year, and if your company is not doing this you are selling too little of your product during the time when it is needed most and the market is best. It also contends that, merely because *you* do not sell the most during the time when the market is best, does not change the fact that the colder and darker months of the year are the best months. It has also come to the conclusion that one reason for these

peaks and valleys in the output is the lack of proper selling methods in the sale of gas appliances. With the exception of the room heater, there is no gas appliance known to your committee that could not be sold to burn twelve months of the year, and we, therefore, make strong recommendations that, in the sale of appliances, the customer be educated to the fact that they are for use the whole year round.

Gas lighting, gas water-heating, gas cooking have not been thoroughly pushed, to the extent that will bring the business of the cold months where it should be, and we hope that this question will be taken up very seriously by each member of the association and given serious consideration, so that (1) they may lay plans to sell appliances on a twelve months' burning basis; (2) the cost of coal may be brought to the consumers' minds, and (3) a comparison may be made between the cost of coal and the cost of gas.

We are also suggesting some questions that are being sent by some companies to their customers, with prizes offered for the best answers, in an endeavor to bring to their minds what they are actually paying monthly for coal, and how it compares with the cost of gas.

PRIZE CONTEST QUESTIONS

1. Q. Have you a coal range?
2. Q. What months of the year do you use it?
3. Q. Why?
4. Q. When in use, how many hods of coal are used daily.
5. Q. How many pounds of coal does YOUR hod hold?
6. Q. How much does coal cost you by the ton?
7. Q. How much, therefore, does it cost you by the pound?
8. Q. How much does it cost you monthly for the wood you use in your range?
9. Q. How much does it cost you monthly to have ashes removed?
10. Q. By above figures, how much, therefore, does it cost monthly to use your coal range?
11. Q. What do you use your coal range for? In Summer? In Winter?
12. Q. How many in your family.
13. Q. Do you know how much it would cost you monthly to do the above work with gas?
14. Q. Would you be interested to know?

Answering these questions brings home to each customer the real monthly cost of coal and also a recognition of its dirt and inconvenience. The questionnaire brings in prospects for appliances for sales department.

May, June and July seem to be the months in which most gas appliances are sold by the companies. The late fall and winter months show a decided dropping off in the appliance sales. This, to your committee's mind, is one of the reasons why gas appliances are not used more in the wintertime. Enthusiastic selling-campaigns, with advertising and publicity during the cold months of the year, would keep before the consumer's mind the advisability of using gas appliances; but if these are neglected, and particularly if sales efforts cease, the consumers necessarily forget the importance and convenience of using gas appliances during this time. Selling-campaigns are being taken care of by the campaign committee, and therefore this committee merely wishes to bring to the attention of the gas company sales departments and appliance manufacturers the fact that continued sales effort on appliances will mean continued increase in sales of gas, and that, when the appliance sales efforts decrease, there is a corresponding decrease in interest and use of appliances by the customers.

Absorption of Gasoline from Natural Gas a Large Industry

A report on "Natural Gas and Natural Gas Gasoline in 1917," by John D. Northrop, was recently published by the United States Geological Survey Department of the Interior. It gives statistics of the production and consumption of natural gas and sketches the condition of the industry in twenty-five States. It gives also statistics concerning gasoline made from natural gas in that year.

The recovery of gasoline from natural gas has now become a large industry, which contributes materially to the supply of motor fuels. Experiments in the conversion of natural gas to gasoline were made as early as 1903, but experiment did not give way to commercial production until about 1910. The growth of the industry since that year has been remarkable. In 1911 there were in operation 176 plants, which produced about 7,400,000 gallons of raw gasoline from natural gas. In 1917, only six years later, there were 886 plants, which produced nearly 218,000,000 gallons. Prior to 1916 most of the gasoline recovered from natural gas was derived from casing-head gas obtained from oil wells by methods involving compression and condensation, but from year to year an increasingly large proportion of the annual output of natural gas gasoline has been recovered by the absorption process, which has now been applied not only to "wet" gas from oil wells, but also to so-called "dry" gas, which occurs independent of oil and constitutes the main supply of natural gas. Dry gas cannot be profitably converted into gasoline by compression.

Maintaining Carbureter Pressure at Great Heights

The power developed by a gas engine is proportional to the weight of fuel consumed in a given time, and the weight of fuel must bear a constant relationship to the weight of air (and oxygen) drawn into the engine. With increase of height the weight of air drawn into the cylinders per revolution of the engine decreases, and the power falls off until the aeroplane reaches its "ceiling"—i. e., until it has no surplus power left for climbing. The only way of overcoming the difficulty is to feed a constant weight of air to the carbureter, independently of the density of the surrounding atmosphere. The most promising means of accomplishing this that has appeared so far is a combination of a centrifugal air fan and a turbine driven by the exhaust gases from the engine, the two revolving parts being mounted on a common spindle but in separate casings. This device is able to keep the air supply to the carbureter at sea-level pressure through a range of 20,000 ft. As the demand on the apparatus varies with altitude, by-pass valves are fitted which allow the exhaust gases to escape direct to the atmosphere at ground level, but can be closed gradually to increase the speed of the turbine as the machine climbs

Recommend Deeper Bell and Elimination of Lead Groove for Cast Iron Pipe to Be Jointed with Cement

Object Is to Take Advantage of Shear Resistance of Cement Being Greater than Strength of Bond

The necessity for discarding rule of thumb methods for joint making and substituting methods based on scientific analysis was indicated by two important developments that occurred in the few years previous to 1914, declared the report of the Cast Iron Pipe Joints Committee, G. I. Vincent, chairman, of the American Gas Association.

1. The extended use of the cement joint in standard bells in large mains without any technical investigation, resulting in some success but many discouraging failures.

2. The use of cast iron mains for pressure higher than the usual low pressure and particularly the conversion of low pressure mains into mains carrying higher pressures.

A committee on cast iron pipe joints was appointed which made a preliminary report which was printed in full with discussions in Volume 10 of the Proceedings of the American Gas Institute, pages 311 to 343. This will be referred to hereafter as the first report.

A further report of progress was made and printed in Volume 11 of the Proceedings of the American Gas Institute, pages 1033 to 1046. This will be referred to hereafter as the second report.

A third report of progress was prepared, but as no Institute meeting was held, this was not printed until February, 1919, and it will be found in full on pages 67 to 78 in the February, 1919, number of the *American Gas Association Monthly*. This will be referred to as the third report.

The present committee was appointed with the idea of preparing a satisfactory design for joints for cast iron mains and this has divided itself into two problems.

1. A satisfactory design for joints for mains using high pressures.

2. A satisfactory design, if possible, for an all cement joint for large mains.

No recommendations, however, in this report are intended to exclude the use of lead or lead wool joints in situations where such joints may still be preferable.

Pressures and Main Sizes

No agreement has ever been reached as to what constitutes high and low pressures. Generally mains carrying gas up to a maximum of 10 in. water pressure have been considered low pressure mains. Those carrying pressures up to a maximum of five pounds have been considered medium pressure mains. Those carrying pressures up to the limit to which it is safe to pump artificial gas are considered high pressure mains. However, there seems to be no reason why cast iron mains which are generally used for medium pressures as well as low pressures, could not carry much higher pressures than five pounds if a satisfactory joint could be designed. Any present decision would be subject to change; hence it is assumed, for the discussions in this report, that low pressure mains refer to mains carrying gas under holder or governor pressures measured in inches of water. High pressure mains carry gas raised in pressure by pumping, the pressure being measured in pounds.

A similar lack of agreement exists as to what constitutes large and small mains. In a general way this line has been drawn where cement joints in standard bells have been satisfactory, but again there is a wide variation both in practice and opinion. It is probable that under all normal conditions cement joints in standard bells will be satisfactory in 4 and 6 in. mains for any pressures for which cast iron pipe would be used under present operating conditions. It is possible that larger sizes will be satisfactory, but there have been enough failures reported when cement jointed mains have been converted from low to high pressure, to make the matter open to question. Further, the mains that proved unsatisfactory under these conditions did not have cement joints made with the new specifications.

Further Experimental Data

Following the recommendation in the first report a series of experiments were undertaken to endeavor to determine the actual strength of the cement as used in cement joints under practical operating conditions. The experiment as finally carried out and the equipment used were comparatively simple but required a long period of cut and try work before a satisfactory design could be developed. The experiments were conducted in the Engineering Laboratories of the Iowa State College at Ames, Iowa. A full report is given in the April, 1918, number of *The Iowa Engineer*. It is not necessary to give all the details of the experiment. Four-inch joints were used, as the work was limited by the capacity of the testing machines available. Bells cut from actual stock pipe were used but special spigots had to be designed and cast; every effort was made, however, to have these duplicates of the spigots used in practice. The results checked as closely as could be expected in tests of this kind, in fact more closely than would result in testing a much simpler material. The ultimate strength of bond of cement and iron was shown to be 700 pounds per square inch and the ultimate shearing strength of the cement was 3,000 pounds per square inch.

Experiments were undertaken to determine the effect of casting hot lead against green cement. It was expected that the cement would be materially affected and the experiments were made to determine the best

design for a combination cement and cast lead joint. In the combination cement and lead joint it is desirable to have as wide a band of cement as possible, so it was realized that the omission of the front yarn would be advantageous. Much to our surprise, it was found that the green cement was not affected by the hot cast lead being poured against it.

Experiments were made with split bells and ordinary split sleeves to study the adherence and contact between the iron and cement when old stock was used. This study was made from a mechanical standpoint only, and it developed the fact that greater care should be used in cleaning spigots and bells than has been heretofore thought necessary. Very old stock that has been exposed long enough to cause pitting and scaling could not be cleaned satisfactorily with wire brushes. Vigorous scraping was necessary. Sand blasting should be used where available when using any quantity of old stock. Generally speaking, where old stock was cleaned with the wire brushes in the usual way it was found that, on taking the joints apart, the cement could be removed in large sections—sometimes even the whole half of the joint. When the old stock was cleaned, however, to a point where the iron was almost bright, the adherence was very much improved so that most of the cement could only be removed by actually chipping it loose from the iron.

The Cement Joint

The first report was largely made up of specifications for making cement joints and these have been adopted by a number of companies with satisfaction. Practice has developed three additional rules which should be added to those given in the specifications.

1. More attention must be given to cleaning the iron as covered under the heading "Further Experimental Data." While emphasized in the first report, the very great difficulty of cleaning old stock was not fully realized at that time.

2. The spigot as received from the foundry often has fins and burrs at the end which prevent its coming in reasonably complete contact with the back of the bell. Apparently modern pipe has this defect to a greater extent than the older stock. Spigots should be examined and any unusual projection chipped off.

3. As pointed out in the second report, joints should not be broken.

The specifications given in the first and second reports together with those just covered are not necessarily intended to be given to the workmen in full. They are given in much detail with explanatory notes for the guidance of the manager or engineer, who can make from them such rules and specifications as he thinks necessary for the use of his foremen and workmen.

Comparative Efficiency of Old and New Type of Cement Joints

As stated, the specifications for cement joints have been adopted by a number of companies with satisfaction.

The relative efficiencies of the old and new types of joints are clearly shown in the curves and accompanying data given in Fig. 1. The strengths of joints are figured from the data obtained in the Ames experiments. The old type of joint will result if the specifications given on pages 377 and 380 of the *Catechism of Central Station Gas Engineering* are followed. These represent in a general way what most engineers were using prior to the first report of the Pipe Joints Committee. The new type of joint is one which will result from following the specifications of the committee.

The much greater efficiency of the new type of joint is so obvious from a study of the curves that no further comment is necessary.

Proposed New Type of Bell

A study of the first, second and third reports and a consideration of the matter here given indicate that the two problems of the present committee as given in the introduction to this report may be combined into one problem so far as the type of joint is concerned. If it were attempted to design a cement joint that would be satisfactory in all sizes, it is obvious that advantage should be taken of the fact that the shearing strength of the cement is very much greater than the strength of bond. Shearing strength in standard bells is only that given across the width of the lead groove. Additional lead grooves would, of course, add to the shearing strength but lead grooves should be preferably omitted in combination joints as discussed in the third report of the committee. Greater rigidity than can be certainly secured with standard bells is apparently necessary for combination joints in the larger sizes.

These conditions, as well as others, have led to the design of a new form of bell. While developed primarily for use with combination joints, the design presents a theoretical possibility of making an all-cement joint in mains of all sizes.

The essential difference between the proposed alternate standard and the present standard are as follows:

1. A deepening of the bell in all sizes from 8 in. up.
2. The omission of the lead groove.
3. The increase in the width of the jointing space at the back of the bell.

The first of these changes was made necessary both for a possible all-cement joint or for the combination joint. The theory of the combination joint is that the band of cement acts to prevent transverse stresses set up from any cause from being transferred to the lead (either cast or lead wool) which acts as the packing in front of the cement. The compression strength of lead being low, unusual transverse stresses will compress the lead, making an opening and causing leaks. The much higher compression strength of the cement absorbs the transverse stresses, and the lead remains unaffected. From opinion and practical observation, the standard bell is not deep enough to allow a sufficient width of the cement band, together with the lead band, and deeper bells are therefore necessary. In the earlier study of the combination joints it was not thought that the cement band would necessarily prevent slight movements, due to longitudinal stresses, such as would be set up by temperature changes. The lead band acting as a packing will allow a large number of reversals of stress with actual movement without leaking. This is covered in the discussion of the first report. In the proposed bell, however, the cement band in a combination joint will have greater theoretical strength than any stress (so long as there is a bead on the spigot) to which it is likely to be subjected by any underground change in temperature. Therefore, the combination joint in the proposed bell will be making assurance doubly sure.

For the combination joint it is clear that there is no way to calculate the best depth for the various sizes; so the proposed depths represent only the best judgment of the members of the committee.

For the possible all-cement joint, however, it was desirable to make the ultimate strength of the all-cement joint exceed the ultimate tensile strength of the pipe and this has been accomplished in all sizes, if there is a bead on the spigot.

The lead groove having no particular use, was omitted altogether.

In the proposed bell, all sizes are covered, from 4 to 48 in., to correspond with the present standard table. There is apparently no immediate necessity for changing the standard for the 4 to 6 in. sizes, as the record of cement joints in these sizes over a long period has been satisfactory. The same may be said of the 8 in., although, as indicated heretofore, there have been some failures in this size and to a very limited extent in the 4 to 6 in. where low pressure mains have been converted into high pressure.

After the new bell was designed by your committee, it was submitted to the Committee on Cast Iron Pipe Standards. The two committees thereupon recommended to the Managing Committee of the Technical Section that the proposed bell be recommended to the American Gas Association as a *Tentative Alternate Standard*.

The advantage in recommending it to the association as a tentative standard only, at this time, was apparent for two reasons.

1. As the bell embodies the best of all the practical and theoretical data which your committee has been able to collect, it should eliminate the various designs that have been ordered by a number of engineers for large mains or high pressures. This would make for economy both for the manufacturer and the user.

2. If any subsequent modification suggests itself in practice, it can be added before the alternate bell is finally adopted either as an alternate to the present standard or as the one standard for cast iron pipe.

The Possible All-Cement Joint

The ultimate strength of the all-cement joint exceeds the ultimate strength of the pipe. It would seem, therefore, that it would be reasonably safe to use all-cement joints in all sizes, resulting in lower first costs, lower electric conductivity, and permanent tightness. However, it should be borne in mind that these calculations are all based on stresses parallel to the center line of the main. There are certainly other stresses, due to a number of causes, which may be set up in the main and which are so obscure that no method has yet been suggested to make any theoretical analysis of them. It seems highly probable, however, that the effect of these transverse stresses would increase as the size of the pipe increases. Also, the making of a perfectly uniform very large cement joint is not by any means as simple a matter as the making of a small joint. The indications are so promising, however, that the joint should be tried with all cement in the near future and two engineers have already volunteered to try it, in both cases for five pounds pressure.

In using the proposed tentative standard for all-cement joints in the larger sizes, however, where it is necessary to cut the spigot a combination joint should be used instead of the all-cement, as this proposed tentative standard joint depends for its very high strength entirely on the fact that the entire band of cement is in shear, which is not true if there is no bead on the spigot.

The Combination Joint

The combination of cement and cast lead or cement and lead wool joint was fully discussed in the third report of the committee. The cheapest form of satisfactory combination joint can be made as follows:

Make a cement joint following the specifications for cement joints up to the point where the rope used to drive in the cement is withdrawn. Enough cement should be used to leave a space 1⅛ in. deep for the lead. Carefully clean out all the cement adhering to the bell and spigot. Undoubtedly some simple tools can be made to facilitate this. Preferably the cement should present a square face when the excess cement is cleaned out.

Cast and caulk a lead joint in the space left, in the usual way. Pour a small quantity (½ to 1 oz.) of kerosene in the gate before casting, to prevent blowing. There is no objection to waiting until the cement sets before casting the joint, but practical and laboratory work show that there is nothing gained by waiting for the setting, before casting.

Proposed Bell for Specials

The committee does not recommend the tentative alternate standard for specials as yet because such large changes in the patterns would be involved. When the bell has shown itself, by practical use, to be entirely satisfactory it will be automatically adopted for specials.

Recommended Practice

While it is perhaps unwise to make definite recommendations as to practical installations, the stating of the best judgment of the members of the committee may be of assistance to other engineers in helping them to solve their problems.

Your committee definitely recommends:

The adoption of the new design of bell for a tentative alternate standard, to be called for convenience "B" bell.

Your committee suggests for practical main installation work under normal conditions, the following practice:

For 4 to 6 in. mains, any pressure. All-cement joints in either standard or "B" bells.

For 8 in. mains, low pressure. Cement joints in "B" bells or possibly cement joints in standard bells.

For 8 in. mains, high pressure. Possibly cement joints in "B" bells or combination joints in standard or "B" bells.

For 10 in. mains and over, low pressure. Combination joints in standard or "B" bells or, possibly, cement joints in "B" bells.

For 10 in. and 12 in. mains. At least the use of the all-cement joint in "B" bells is recommended.

For 10 in. mains and over, high pressure. Combination joints in "B" bells. Possibly all cement joints in "B" bells may be satisfactory in anything over 10 in., high pressure, but they should be adopted experimentally only at first.

These suggestions refer only to cement and combination joints and are, of course, not applicable to the locations where cast lead or lead wool joints may still be preferable.

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As the Journal Views It

Giving a Boost to Industrial Fuel Gas

The report of the Industrial Fuel Committee of the American Gas Association is a different kind of a report.

The men who constituted the committee, headed by Thomson King, evidently took their responsibility.

They report findings aimed towards boosting the industrial fuel branch rather than placating the sensibilities of individuals whose poise might be ruffled somewhat by having their personal notions put to rout.

There is an undercurrent of dissatisfaction in the tone of this report. It is palpable that the committee does not feel that its ideas have been given the consideration they should have been given.

The committee wanted a man to centralize efforts towards giving very needful publicity to industrial fuel gas. It felt it had such a man available in the present industrial fuel engineer of the association.

But it found that the association insisted that this man be as near self-supporting as possible. In other words, he must go out in the field, and in competition with members of the association, earn fees sufficient to almost pay his way.

Now, as a matter of fact, the American Gas Engineering Journal feels that the need or desirability of the engineering service in industrial fuel as furnished by the association is a thing of the past.

When industrial fuel engineers were scarce it might have been justified. To-day there are industrial fuel engineers who are making a living by supplying such service as the industrial engineer of the American Gas Association is furnished.

Not being subsidized, they are competing under an

unfair handicap. Business is denied them that should be theirs.

The association's specialist is advertised by the association. If the private consultant had the money to so advertise himself, professional ethics would deny him the privilege.

The private consultant must make his task pay to live. The association expects its specialist only to be *as nearly self-supporting as possible*.

It is time that the association's specialist be withdrawn from field competition with the association's members. Bringing him in to headquarters to do the class of work the Industrial Fuel Committee would have him do would result in the retaining of his services in a manner profitable to the whole gas industry and unfair to no part of it.

The committee wants a revamping and a vitalizing of the industrial fuel educational courses.

The flaws it points out are serious and the remedies offered sane and well considered. Its recommendations in this respect should be adopted and promptly executed.

We're Not Altogether Convinced, but It's Just as Well to Be Prepared

The prognosticators are busy.

It's going to be a hard winter—and long.

The heavy-weather sides of trees show it—the bees and the berries.

And maybe it will. On the other hand, it may not be.

We're not altogether convinced either way, but it's just as well to be prepared.

Gas companies should be well stocked up in heaters of the auxiliary type, and, further, they should be paving the way to gas-fired central heating plants.

Heater manufacturers should endeavor to stimulate such activity on the gas company's part. A large number of them were caught by last year's decline in market with large overstocks on hand. Extra discounts might be justified by quicker turnover.

Gas house heating will some day be a principal market. And gas house heating needs publicity and recorded results from operating installations.

To secure either gas heating sales efforts must be largely based on opportunism

It might be difficult to convince a prospect that a central heating plant fired with gas is as cheap as a coal-fired plant when we figure in cost of ashes removal and furnace man. In most cases he pays for the ashes removal in taxes and the city will not refund him anything if he hasn't any ashes to be removed. And he may attend to his own furnace.

But he might be convinced if there is an uncertainty as to whether he will be able to get coal and a certainty that he will be able to get gas.

Ordinarily she will not lean indulgently to the thought of an auxiliary gas heater while his central plant is more than sufficient to keep the whole house comfortable. But when that very-low spell comes, when the central plant falls down to the extent that an auxiliary gas heater will supply the deficiency, he is a ready listener.

And opportunism is possible only when we have the essentials ready at hand to avail ourselves of the opportunity when it presents itself.

PUBLICATIONS

State of New York, Public Service Commission, Second District, Opinion of the Commission

Booklet; flexible card binding; 9 by 6 in., 31 pages.

Contents contain the opinion of the New York State, Second District, Public Service Commission, in the matter of the complaint of George S. Buck as Mayor of Buffalo, N. Y., and town of Cheektowaga, Erie County, N. Y., against William J. Judge, and the Peoples Gas Light & Coke Company of Buffalo, N. Y., as to the price proposed to be paid for manufactured gas; also the quality of the gas; and as to the service and facilities; and plant and appliances.

The contents also include the complaint of the respondents in answer to the mayor's complaint, and the petition of the company for the approval of increased rates.

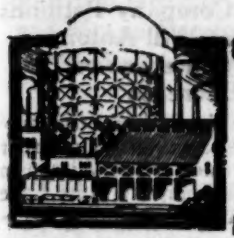
New Legislation of Special Interest to Gas, Electric and Water Companies

Booklet; paper binding; 9 by 6 in., 46 pages. Issued by the Commonwealth of Massachusetts Board of Gas and Electric Light Commissioners; publishers, Wright & Potter Printing Company, 32 Derne Street, Boston, Mass.

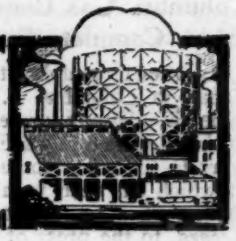
This booklet contains selected paragraphs from "General Acts, 1919," which relate especially to new 1919 gas, electric and water company legislation. Of especial interest to the gas industry are the paragraphs on legislation relative to the following: The Sale of Coke; Disposition of Bonds; Extensions of Locations; Filing by State Boards and Commissions of Recommendations and Suggestions for Legislative Action; Taxation of Domestic Business Corporations.

Consumption of Gas in London

Between 1837 and 1915 the consumption of gas in London has grown from 1,600,000 cu. ft. to 42,624,000 cu. ft., and the average price was reduced from $1.46 to 65 cents per 1,000 cu. ft. The number of consumers per mile of main grew from 105 to 306, and the sales of gas per mile of main from 8,906,000 to 10,050,000 cu. ft. for this period.



NEWS OF THE GAS INDUSTRY



Atlanta Gas Light Company Sold Out of Water Heaters

I. H. Morehead, Jr., chief gas salesman of the Atlanta Gas Light Company, states that "sales of gas ranges and gas water heaters remind one of ante-bellum days." Mr. Morehead says his department has been practically swamped with business and that for the first time in his recollection the gas company is sold out of automatic gas water heaters.

"The water heater business has been exceptionally good," he says, "and the result is that our stock has been wiped out. We are experiencing a lot of difficulty in re-establishing it.

"As to ranges, we haven't had any business like the present in several years—since 1917 at least. Apparently nobody who is moving into new living quarters is willing to carry his old cookstove with him. All are buying new gas ranges, and apparently they are buying much nicer stoves than they formerly were content to own. This is true in spite of the fact that if they bought what they formerly purchased, they would have to pay more. They are willing to pay considerably more in order to get something better than they had.

"It is no longer a question of competition between gas on the one hand and coal or wood on the other. The missionary work is all done. It is just a question now of what kind of a gas stove to buy. The gas range has come thoroughly into its own at last."

Alliance, Ohio, Takes Steps for Manufactured Gas

Threatened with the loss of natural gas Nov. 1, the voters of Alliance, Ohio, adopted a bond issue of $525,000 for the erection of a municipal manufactured gas plant. The vote was: Yes, 992; No, 215. Only a 25 per cent poll of the registered vote was cast. No campaign was made against the issue.

Oscar H. Fogg Forwards Letter of Instructions to A. G. A. Company Members for Action in Coal Crisis

Instructions for procedure by all gas companies for obtaining their coal requirements during the present coal crisis have been forwarded to all company members of the American Gas Association by Oscar H. Fogg, secretary-manager of the association.

All gas companies should study carefully these instructions and follow them out to the letter. The National Committee on Gas & Electric Service has resumed its duties during the strike of the coal miners, and will represent the American Gas Association and all gas interests before the Fuel Administrator, Dr. H. A. Garfield.

Mr. Fogg's letter of instructions follows:

"Nov. 3, 1919.

"To Our Company Members:

"The general strike of coal miners throughout the United States will create trying and abnormal conditions under which the public utilities of the country, including our gas companies, will be called upon to operate.

"With a full realization of the needs of the utilities, the National Committee on Gas and Electric Service, which functioned so ably throughout the war and was in close touch with the fuel situation in Washington, has been revived under the leadership of John W. Lieb, chairman, and George W. Elliott, secretary. This committee will again represent our association and the gas interests during the present crisis, and has once more established headquarters in Washington.

"The Fuel Administrator, Dr. Harry A. Garfield, has established a priority list of industries on which the public utilities are given a position of preference.

"The Railroad Administration will be governed by this list. The National Committee on Gas and Electric Service will give immediate attention to your fuel requirements, and all problems concerning shortage or handling should be taken up immediately and directly with George W. Elliott, secretary, National Committee on Gas and Electric Service, Munsey Building, Washington, D. C.

"Copies of your complaints or requests must also be forwarded to the American Gas Association headquarters, 130 East Fifteenth Street, New York.

"In placing your case before the committee, insure the possibility of immediate action by giving a sufficient and detailed statement of the nature of your complaint, the name of shipper, original point of shipment, destination and railroad over which coal is shipped, exact amount of coal on hand, how long present stock will last, and your requirements for thirty and sixty-day periods.

"The committee will need as much detailed information as you can give in order to secure definite and immediate results.

"Yours very truly,

"AMERICAN GAS ASSOCIATION,

"O. H. FOGG,

"Secretary-Manager."

Gas Supply May Be Shut Off

Unless some arrangement can be effected in the very near future, Johnstown, Pa., will soon be without its present source of natural gas, according to word received by P. J. Morrissey, general manager of the Johnstown Fuel Company.

The People's Natural Gas Company has served official notice of discontinuance of the supply to the Johnstown Fuel Supply Company and the confirmation of this report was received direct from J. B. Tonkin, president of the People's Natural Gas Company of Pittsburgh.

According to word received from the gas corporation, the available supply of gas is gradually diminishing and Johnstown may face a serious state of affairs after Oct. 1, unless an early remedy is found.

Columbia Gas Company Will Complete Canal

An offer to complete the Columbia Canal, in Columbia, S. C., is contained in a letter addresed by the Columbia Railway, Gas & Electric Company to the canal commission, copy of which has been furnished, at the request of a representative of *The Record*, to the press of the State.

"The decision recently rendered by the Supreme Court of South Carolina in the case of the State of South Carolina *vs.* Columbia Railway, Gas & Electric Company," says the letter, "is the first adjudication that this company is obligated to complete the Columbia Canal down to Congaree River, a few yards above the mouth of Rocky Branch.

"This company hereby offers to complete the Columbia Canal down to Congaree River a few yards above the mouth of Rocky Branch, and to construct and maintain the same in accordance with the Act of Dec. 24, 1887, and acts amendatory thereof, under which the grant of the canal to this company was made, and will begin work thereon upon notice from you that this offer is accepted, and carry the same through without delay."

Rochester Company Changes Its Name

The stockholders of the Rochester Railway & Light Company, at a special meeting held, voted to change the name of the company to Rochester Gas & Electric Corporation.

The company has had no connection with the traction interests, but owing to its name has by many persons been looked upon as part of the street railway system. The street railway has been a customer of the power company, but is a distinct corporation. It is believed that the change of name will prevent further confusion in the minds of the public.

The stockholders of the lighting company also voted to increase the capital stock of the company from $17,250,000 to $18,250,000 to consist of 182,500 shares of $100 par value. This means the issuance of $1,000,000 more of new stock. Both proposals were sent to the Public Service Commission and the Secretary of State for approval.

President James T. Hutchings expects that the new name will be made effective within two or three weeks.

"No Accident" Record in Big Main-Laying Job

The largest main laying job of recent months done by the Peoples Gas Light & Coke Company has been completed with a "No Accident" record.

A 36-in. main was laid in Keeler Avenue from Twenty-second Street south to Thirty-fifth Street and thence east to Crawford Avenue, covering in all a distance of 9,032 ft. The work, which was started in May, lasted into September, or in other words, about four months. Although the laying of a 36-in. main is no different in method than the laying of a smaller size main, the existing physical hazards are increased in proportion to the size of the job, and the greater weight of the larger pipe, which in certain phases of the work must be handled by hand.

The greater part of the excavation was done by a digging machine and, where possible, a backfiller was used to fill in the ditch. The difficulties involved in the job included passing under three street car tracks and under two railroad lines, each of which carries a heavy traffic. In one case a large stone, about the size of a piano, had to be cut out in order to lay the main at that spot. Another difficulty encountered was the passage through a section of what is known as Mud Lake, which is just what the name implies.

The use of goggles was insisted upon in all cases of tapping mains, cutting pipe, cutouts, and chipping off concrete. Goggles were also used by the men pouring the hot lead to close tight the pipe joints, and in no case were any men burned by the hot metal. The average weight of lead used per joint was about 54 lb.; thus nearly 25 tons of lead were poured on the joints of the complete job.

Inspections were made daily by men who believed in "safety first," and outside inspectors could offer no suggestions or criticism for improvement of safety conditions.

Columbia Gas & Electric Will Lay Pipe Line Under Ohio River

It is reported that the Columbia Gas & Electric Company contemplates construction of an additional pipe line, to be laid under the Ohio River from the Kentucky shore at that point, to aid in supplying gas to Cincinnati, Ohio.

Wisconsin Company Petitions Rates that Will Automatically Increase or Decrease

The Wisconsin Railroad Commission has issued a decision and order adjusting the rates of the Wisconsin Gas & Electric Company in its Lake Shore communities, including Kenosha, Racine, Carrollville, Cudahy, and South Milwuakee.

The adjustments, owing to the abnormal conditions prevailing, mean an increase in rates.

The petition asks the commission to establish rates that will automatically decrease or increase at three months' intervals in accordance with its cost of service.

Discussing the question raised by the Kenosha authorities that the differentials between Racine and Kenosha made the rates higher in Kenosha, was unjustifiable, the commission finds that the differential is equitable because the number of consumers per mile of main in Racine is 123.6 as against 112 in Kenosha.

According to figures of the distribution of property between the communities served, each 1,000 cu. ft. of gas sales for Racine must carry the charges on 3.62 of property; in Kenosha 2.94 of property and in the district north of Racine 2.50.

Southern Light and Power Receives One Year's Extension of Rates

In an order entered Oct. 23 by the State Public Utilities Commision of Illinois gives the Southern Light & Power Company the right to continue in effect until Oct. 31, 1920, its present schedule of rates for gas service at Hillsboro and Schram City, Ill. The company was granted an increase six months ago, to be in effect Oct. 31, 1919.

Pamphlet on Economical Consumption of Gas

The Peoples Gas Light & Coke Company, anticipating curiosity on the part of consumers as to why their fall and winter gas bills are higher, is sending out a little pamphlet called *The Sun Tells It*, with every gas bill this month.

The pamphlet has a chart showing how artificial light is needed more and more as the end of the year approaches. Suggestions for economical consumption of gas are also printed in the pamphlet.

Industrial Heating Laboratory of Chicago Company Issues "Industrial Bulletins"

The industrial division of the Peoples Gas Light & Coke Company this month is sending to industrial establishments in the Middle West the first of a series of industrial bulletins, pointing out the many uses to which gas, "the hundred per cent fuel," can be put in the up-to-date factory of to-day. The bulletin for October deals with the use of gas furnaces and gas appliances in enameling plants.

The bulletin carries photographs of the enameling room at the plant of Theodore A. Kochs, in Chicago, equipped throughout with gas furnaces. This company is one of the largest manufacturers of barber's furniture and lavatory fixtures in the world. The message in the bulletin points out that gas has been adopted as fuel in every porcelain enameling plant established in Chicago during the past three years, and gives the following pointed reasons:

Gas contains no chemical constituent which adversely affects the work —all other fuels do.

Gas enameling furnaces need no muffle—maintainence thus is reduced to the minimum.

Gas admits of perfect temperature control—risk of ruining work by overheating eliminated.

The bulletin also tells of the advantageous possibilities of using gas for japanning, enameling, lacquer drying, rust proofing, galvanizing, sherardizing, tinning, baking cores, drying ladles, cupola lighting, forging, annealing, hardening and tempering.

The bulletin is prepared under the direction of the Industrial Heating Laboratory of the Peoples Company, which stands ready to solve all gas problems for prospective gas users.

Knoxville Company Receives 10% Increase; Requested 40%

An additional income of over $52,000 a year will be given the Knoxville (Tenn.) Gas Company as a result of the ten cents rate increase, the fifty cents minimum and the fifty cents a month "service charge," allowed it by the State Public Utilities Commission.

B. H. Jardine, manager of the new business department of the Knoxville Gas Company, stated that the ten cents per 1,000 cu. ft. increase will give an extra revenue of about $1,500 a month, or $18,000 a year.

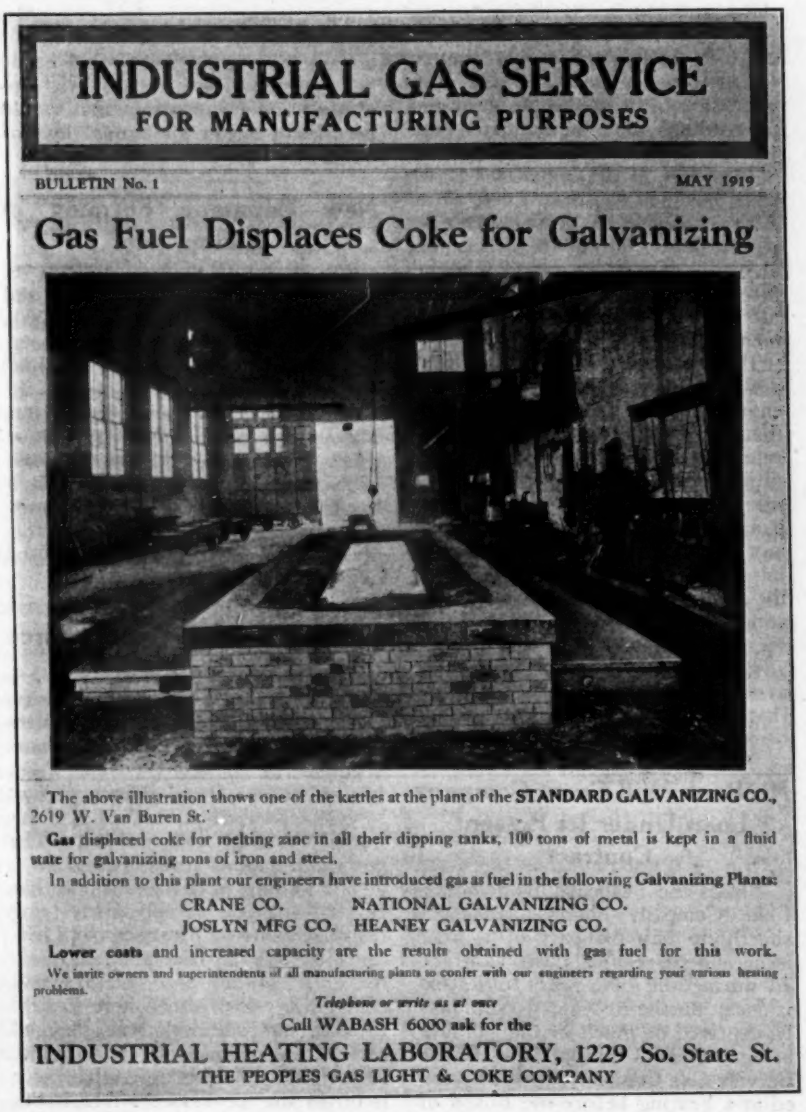
The company now has 5,363 gas users. The fifty cents a month "service charge" will give additional revenue aggregating $2,681.50 a month or $32,178 a year.

Probably 800 of the 5,363 consumers have been billed at less than fifty cents per month, the average being about twenty-five cents, making the total paid approximately $200 per month, or $2,400 per year. The fifty cents minimum charge, of course, will increase this cost to the 800 consumers to $400, or an additional gain of $2,400 per year.

These three items bring the company's additional revenue up to about $52,578 annually or more than $4,381 per month.

As the city of Knoxville receives 5 per cent of the gas company's income as a franchise tax, this will mean an increase of about $2,628 the company will pay in municipal revenues.

Mr. Jardine said the ten cents increase is only a temporary relief, to be in effect while the public utilities commission can make a thorough investigation into the needs of the gas company. He anticipates the company may be able to show the commission within the next six months


INDUSTRIAL GAS SERVICE
FOR MANUFACTURING PURPOSES
BULLETIN No. 1
MAY 1919
Gas Fuel Displaces Coke for Galvanizing
The above illustration shows one of the kettles at the plant of the STANDARD GALVANIZING CO., 2619 W. Van Buren St.
Gas displaced coke for melting zinc in all their dipping tanks, 100 tons of metal is kept in a fluid state for galvanizing tons of iron and steel.
In addition to this plant our engineers have introduced gas as fuel in the following Galvanizing Plants:
CRANE CO. NATIONAL GALVANIZING CO.
JOSLYN MFG CO. HEANEY GALVANIZING CO.
Lower costs and increased capacity are the results obtained with gas fuel for this work.
We invite owners and superintendents of all manufacturing plants to confer with our engineers regarding your various heating problems.
Telephone or write us at once
Call WABASH 6000 ask for the
INDUSTRIAL HEATING LABORATORY, 1229 So. State St.
THE PEOPLES GAS LIGHT & COKE COMPANY

THE FIRST OF THE INDUSTRIAL BULLETINS SENT BY THE CHICAGO COMPANY TO ALL INDUSTRIAL PLANTS THROUGHOUT THE MIDDLE WEST

that the entire 40 per cent increase which was requested is necessary to produce a fair return on the investment.

Small Increase Granted — Commission Explains Sparse Territory Does Not Allow Rate for Fair Return

The Oakdale Gas Company, operating a manufactured gas plant in Oakland, Cal., and selling in this city and Riverbank, Cal., has been authorized by the State Railroad Commission of California to increase its rates for gas. The present rate calls for a net charge of $1 for the first 500 cu. ft. per meter per month; $1.70 for the next 2,500 ft.; $1.50 for the next 5,000 cu. ft.; $1.25 for the next 7,000 ft., and for all over 15,000 cu. ft., $1.10 per 1,000. The new rates, which are to be applicable to all meter readings taken on and after Sept. 10, are as follows:

First 400, $1.10; next 2,600, $2.10; next 5,000, $1.85; next 7,000, $1.50. All over 15,000 cu. ft. per meter per month per 1,000 cu. ft., $1.25. The above is the gross rate. The net rate is deducted from the gross. The net rate is earned by prompt payment of bills.

The commission finds that the company is in a territory not dense enough in population to justify a rate that would give the company a fair return on its investment. Such a rate, holds the commission, would result in loss of patronage. The company has never been able to set aside any depreciation fund. The commission disposes of the claim that the addition of the Riverbank service added to the cost of the Oakdale service by pointing out that it actually resulted in a reduction of the average cost of the gas used, and that the extension was of general benefit to the system.

No Bank Will Grant Company Loan Under Its Present Contract

Unless the Seaboard By-Products Coke Company obtains $1,000,000 shortly to pay off part of a bond issue and current liabilities contracted during the first years of its existence, northern New Jersey may be deprived of much of the gas now being supplied through the Public Service Gas Company, it was asserted at a hearing before the Board of Public Utility Commissioners by H. B. Rust, president of the Seaboard Company.

Mr. Rust appeared to substantiate President McCarter's recent testimony in which he said the Seaboard could not continue to supply gas at the contracted price and that the supply would cease Oct. 8 unless more money was forthcoming.

If the commission agrees to allow the Public Service Gas Company to ignore part of the amount annually set aside for depreciation during this emergency in order to have more money with which to pay the Seaboard company an increase, as suggested by Mr. McCarter, the Seaboard company believes it can obtain a loan from banking institutions to carry it through the present crisis. Under present circumstances, Mr. Rust declared, no bank will consider an advance because it would easily be seen that the company was operating under a contract that would necessarily mean an annual loss of hundreds of thousands of dollars.

New Company Forming in Elkton, Md.

Frank E. Williams, William S. Evans, I. T. Kepler, O. C. Giles and Joshua Witwith, of Elkton, Md., were appointed a committee to organize a new gas company for Elkton, Md.,

The present company in Elkton, Md., which is operating its plant at a heavy loss, has petitioned the Public Service Commission to permit it to go out of business. This permission was not granted, hence the formation of a new company, composed of local people.

Tools Hurled in Air by Force of Gas Flow

After a strata of asphalt 7 ft. thick has been cut through, drillers placing a water well on the Adams brothers' farm near Hartselle, Ala., twelve miles from Albany, Ala., struck a flow of natural gas which hurled the tools into the air. The gas was found at a depth of 46 ft.

The finding of the gas supply has revived stories of oil underlying many sections of Morgan and Lawrence counties in Alabama. A quarter of a century ago several small companies were formed here to drill for oil, but one well was plugged after, it is claimed, oil was found. Reports of geologists agree that there is oil in the Tennessee River basin, but in what quantities is not known.

New England Power Company Seeks Approval for New Bond Issue

The New England Power Company has asked the Board of Gas and Electric Light Commissioners to approve an issue of $600,000 of additional first mortgage bonds and $350,000 of additional preferred stock.

The preferred stock will be sold at $100 a share if the board approves the increase, the proceeds of the sale of the bonds and stock will be applied for new extensions.

Increase Granted; 550 B.t.u. Standard Established

The city commissioners of Manhattan, Kans., have passed an ordinance granting the Manhattan Gas & Electric Company the privilege of increasing the gas and electric rates.

The city commissioners stated that a thorough investigation of the company's books and reports, to which they were given access, showed that owing to abnormal increases in cost of oil, coal and labor and increases in cost of current purchases from Rocky Ford Milling & Power Company, the gas and electric company has been hard pressed to keep things going for the past two years, and has been operating at a considerable loss, and also has not been able to keep plants and outside property in as good condition as desired.

The new gas rate is about the same as other Kansas cities where gas is manufactured. A heating value standard of 550 B.t.u. per cu. ft. with a penalty if gas does not meet the standard, the company can charge only $1.35 per 1,000 cu. ft. for such months' consumption. This is the first time the commission has prescribed the quality of gas.

Asks Increased Rate for Large Consumers

The State Corporation of Oklahoma has issued an order in the case of the Henryetta (Okla.) Gas Company and Henryetta Public Service Company for increase in rates for gas to large consumers. The schedule of rates granted begins with 15 cents per 1,000 cu. ft. for the first 100,000 and ranges to 15 cents when half a million is used. In excess of half a million the rate is 7 8-100 cents per 1,000 cu. ft.

President Daly Offers Gas Property to City of Cleveland

Properties of the East Ohio Gas Company in Cleveland are available for city purchase if the municipality decides to enter the manufactured gas business at the expiration of the company's franchise in February, 1921.

M. B. Daly, president of the company, in making that statement also declared his company intended to enter the manufactured gas business when the supply of natural gas is exhausted. However, he said that rather than have any controversy with the city, the company would willingly dispose of its holdings.

Perry D. Caldwell, chairman of the Cleveland, Ohio, council committee on gas, called a committee meeting to discuss the advisability of employing an expert to determine the expense and practicability of the city entering the manufactured gas business.

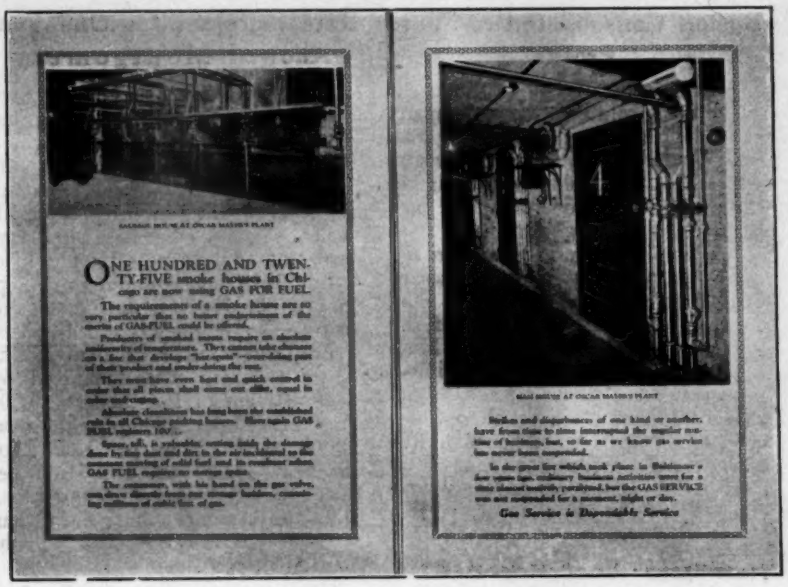
The practicability of using natural gas mains for the transmission of gas must be determined to ascertain the value the properties of the East Ohio Gas Company would be to the city in the event it enters the gas business, councilmen and gas officials agreed.

Chicago Company Designs Gas Fired Furnace for Paint Company

Engineers of the Peoples Gas Light & Coke Company of Chicago have designed and secured the order for a special furnace for the Elastic Paint Company. This involves an entirely new operation in paint manufacture. The Elastic Paint Company had already designed a furnace to burn coke. When the Peoples Company found out about it, it took hold of the proposition and soon convinced the Elastic Paint Company that gas was the only fuel for this work. This installation will add 750,000 cu. ft. per month consumption to the Chicago company's industrial fuel load.

Galena, Ill., Plant Sold

The plant of the Galena Gas Light Company, of Galena, Ill., has been sold to the Portsmouth Savings Bank of Portsmouth, Ohio, which will continue the business. The concern went into the hands of a receiver a few months ago.



INSIDE OF INDUSTRIAL BULLETIN NO. 3

Kansas Officials Take up Protection of Small Consumer in 3-Way Plan

The Kansas side will work with the gas companies, the public utility commission and the receiver in an effort to adjust differences and cause a dismissal of years of litigation it assured that present consideration of a "three-way plan" will be safeguarded to prevent an increase in the price of gas to the small consumer.

This was the stand taken by G. B. Little, finance commissioner, at a conference with C. W. Green, member of the Kansas Public Utility Commission.

"The public utility commission entered this fight several years ago on behalf of the public, and will make no compromise that mean additional burdens on the small consumer," Mr. Green told Mr. Little. "Any plan agreed to by the commission will undoubtedly safeguard any consumer against the possibility of paying, under any conditions, in excess of present schedules, regardless of the opportunity the plan may offer to other consumers for reduced rates."

"If this present three-way schedule is adopted without restrictions, fixing a maximum price that may be charged," Mr. Little said, "the small consumer must either prepare to burn more gas, pay practically double the present rates or limit the amount of gas he may use below actual family needs. These will be the only alternatives open to him unless he chooses to give up the use of gas."

Mr. Green assured Mr. Little that the city need not fear that the three-way plan, or any other plan, would be adopted on a basis that put the entire penalty on the small consumer.

Greenville Natural Gas Boosts Rates

The Greenville Natural Gas Company, furnishing natural gas in Greenville, Pa., and vicinity, has filed a new tariff of rates with the Public Service Commission, to become effective on Oct. 11, 1919. The new tariff makes the following increases and omissions in existing rates:

The rate for street lighting is omitted, as is also the rate for industrial and commercial and commercial power service.

The rates for all gas consumed in excess of 5,000 cu. ft. in blocks of 5,000 cu. ft. are increased as follows:

The rate for the second 5,000 cu. ft. of gas supplied during each monthly billing period is increased from 37 to 47 cents per 1,000 cu. ft.

The rate for the third 5,000 cu. ft. of gas supplied during each monthly billing period is increased from 37 to 52 cents per 1,000 cu. ft.

For all gas supplied during each monthly billing period in excess of 5,000 cu. ft., the rate is increased from 37 to 57 cents per 1,000 cu. ft.

The readiness-to-serve charge ot 25 cents is changed in the new tariff to 20 cents.

Boston Consolidated to Share Profits

At this time of labor unrest, the Boston Consolidated Gas Company calls attention to a profit-sharing plan it has had in vogue for several years, which enables employees to share in the profits of the company and take part in its management.

All employees who have proved their loyalty by a year of service are eligible to share in the gains. The form of distribution consists of the purchase of preferred stock in Massachusetts gas companies carrying 7 per cent interest rate. Each profit-sharer receives stock equal to 7 per cent of his salary. The plan has worked well, the company, says, as increased dividends depend largely on efficiency of the company.

New Gas Pool Reported in Texas

J. E. Brantley, geologist, reports a new small gas pool in Duval County, in the extreme southern part of Texas, which promises to offer sufficient production if drilled out to supply gas to small towns in that vicinity. The new field is on a ranch about ten miles northwest of Benevides, Texas, and there are two wells producing dry gas at 185 pounds pressure from depths of 520 to 550 ft. A third well has found the gas sand.

Mr. Brantley said he had not previously heard of this pool. He was in the vicinity, making some investigations, when he was informed of it and visited it. Numerous pockets of gas have been discovered in this section, as well as some small shallow oil pools including a salt dome well at Benevides, in what is known locally as the Piedras Pintas field, which is doing about twenty-five barrels a day.

New Rates for Binghamton Gas Works

The Binghamton Gas Works has filed with the New York Public Service Commission, Second District, new rates for gas in Binghamton and Johnson City, N. Y., proposed as effective on Dec. 1. The changes are:

Blockrates for gas for light or fuel, available to all consumers, reduced five cents per 1,000 cu. ft., the new rates being $1.25 per 1,000 cu. ft. for the first 10,000 cu. ft. and $1.15 for 1,000 cu. ft. for excess of 10,000 cu. ft. per month.

Rate Increases for One Year Allowed Montgomery L. & W. P. Co.

An increase in gas rates was granted the Montgomery (Ala.) Light & Water Power Company after the commissioners had heard a request of General R. E. Steiner in behalf of the company. The new rates were permitted to become effective from Oct. 1, 1919, and continue until September 30, 1920, a period of one year.

The following is the new rate schedule which was submitted by General Steiner: For the first 10,000 cu. ft., $1.50 per 1,000; for the next 20,000 cu. ft., $1.40 per 1,000; for the next 30,000 cu. ft., $1.30 per 1,000; for the next 50,000 cu. ft., $1.20; anyone consuming more than 100,000 cu. ft. per month will be charged $1 per 1,000.

The granting of the new rates was objected to by Judge Tyson on the ground that the city commission had no right to change the franchise rates at this time. Under the franchise, which has been in effect since 1901, the rates have been $1.26 per 1,000 ft. for lighting purposes and $1.08 per 1,000 cu. ft. for heating. It is stated that during the past year the company has lost about $60,000.

Kansas Company Asks Increase to Cover Gate Rate

An increase in gas rates from 35 to 50 cents per 1,000 ft. to the consumer is asked by the Coffeyville (Kans.) Gas & Fuel Company, in an application filed yesterday with the Kansas Public Utilities Commission. The local company stated that it now is paying 20 cents a 1,000 to the Kansas Natural Gas Company, at the city gates, and standing leakage, and needs the 50-cent rate to make expenses and a reasonable profit.

New England Power Asks Authority to Issue New Stock

The New England Power Company has asked the Massachusetts Gas & Electric Light Commissioners for authority to issue new stock to the amount of $350,000, and bonds to the extent of $600,000, to meet expenses incurred in making plant additions and extensions. The board has taken the question under advisement.

N. Y. Company Files in Court Schedule of $198,000 Loss

In the suit of the Consolidated Gas Company of New York, brought to have it decreed by the Federal District Court that the 80 per cent rate established by the New York State Legislature in 1906 is confiscatory and unconstitutional, Special Master A. S. Gilbert accepted as evidence in the case schedules made after an examination of the books, vouchers, etc., of the Consolidated Gas Company, showing that during the year 1918 the company's total revenue from its gas business was $16,146,841.77 and its expenses amounted to $16,345,474.90, indicating a loss for the year of $198,633.13.

Ample Supply of Natural Assured by Frankfort Company

Ample supply of gas for the first time seems assured the city of Frankfort, Ky., by the announcement that the Frankfort Natural Gas Company during the last year has connected with seventeen wells with a daily capacity of 15,000,000 cu. ft. It now receives its supply from four sources any one of which would satisfy the demand in ordinary winter weather. Since its organization the company has been improving its lines and enlarging its sources of supply as much as possible.

At the annual meeting the officers and directors were re-elected as follows: Robert S. Hampton, president; J. H. Hazelrigg, vice president; W. O. Walker, secretary and treasurer, and in addition to these Joseph Seep, D. L. Hazelrigg, John Tonkin and R. R. Harting are on the directorate.

Southern Counties Company Petitions Another Bond Issue

The Southern Counties Gas Company, of California, has applied to the Railroad Commission for authority to issue and sell bonds to the extent of $631,500, the request being based on capital expenditures totaling $227,633.84 already made and proposed expenditures of $540,100 for permanent extensions to the company's system. In connection with the request for bonds to be issued against the proposed movements the company submits a plan covering all the expenditures and asks that it be approved by the commission.

Inventory of Grand Rapids Company, Considered Engineering Feat, Is Completed

The inventory of the Grand Rapids (Mich.) Gas Light Company has been completed. This task was undertaken by City Engineer G. J. Wagner upon recommendation of the city commission so that a basis for the new franchise might be established, and it is considered one of the most complete engineering feats carried out under the present commission form of government.

When it is considered the inventory of the plant and equipment of the company fills ten books of 100 pages each written on both sides, and the inventory of the piping and fittings is listed on sixty large map sheets more than 36 in. square and relisted and summed up on eighty letter size typewritten sheets and that it required 300 large sheets and 100 separate blue prints to properly inventory and record every piece of apparatus, such as engines and pumps, with all dimensions and sizes checked up right on the ground by competent engineers, some idea of the size of the task may be obtained. The field inventory was made for the city by R. E. Kellog, of Chicago, and an engineer from the gas company.

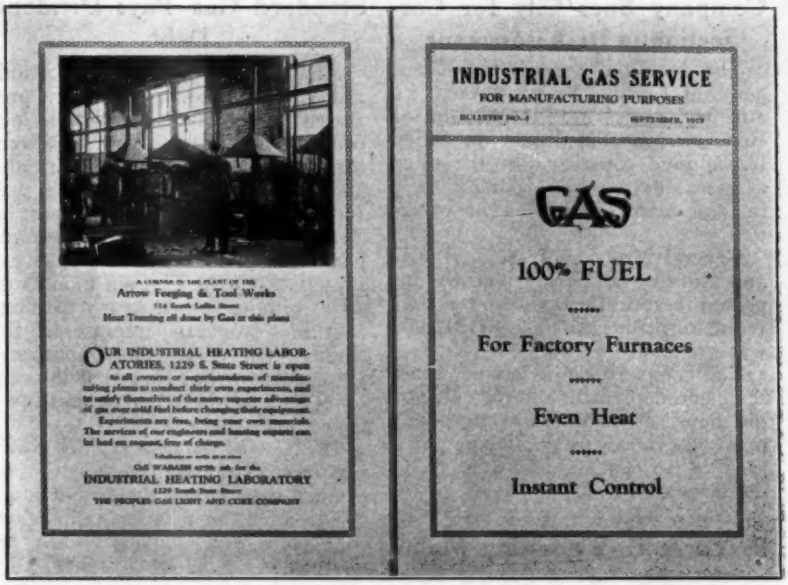
This is the first complete record the city of Grand Rapids ever has had of any of its utilities, showing in dollars and cents and substantiated by unimpeachable proof the exact valuation of the physical properties of the company.

One of the features of the inventory is that in no place is a mention of securities made as part of the physical valuation of the companies. The words stock and bonds do not appear in any of the hundreds of closely typewritten pages.

New Rates Effective in Canton, Ohio

Announcement has been made by the East Ohio Gas Company that the new rates embodied in the ordinance recently passed by the city council of Canton, Ohio, assuring Canton, Ohio, consumers gas for the next ten years, went into effect on Oct. 20.

The following rates now prevail in Canton and North Canton: First 5,000 ft., 48 cents; second 5,000 ft., 53 cents; third 5,000 ft., 58 cents, and over 15,000 ft., 63 cents per 1,000 cu. ft. The above rates are subject to 3 per cent discount if paid before the tenth of the month.



THE FRONT AND BACK COVERS OF INDUSTRIAL BULLETIN NO. 4

Gas Installation for Smokehouse Completed, Ready for Operation

When gas-burning equipment designed by and built under the supervision of George M. Daniel, of the gas sales department of the Atlanta Gas Light Company, of Atlanta, Ga., is installed in the plant of the Purity Market Company, that company will possess the only smokehouse in the city of Atlanta, using gas for smoking hams. All others use wood, though the idea of gas installation is not new, having been in use in other parts of the country for some months and having proved its efficiency beyond question.

In order to get the desired effect of wood smoke, sawdust will be used. This will be spread in a shallow pan over one of the three burners, the two outside burners furnishing heat for the other phases of the process. Oak, hickory and other sawdust is easily obtainable from any of the large factories in and around Atlanta working those woods. The method is equally as good as the wood process, is much more convenient and is somewhat cheaper.

The Purity Market Company is the Atlanta branch of a large organization owning a number of smokehouses around over the country.

3,000,000 Ft. Flow of Gas at 278 Ft. Depth

A flow of 3,000,000 ft. approximately 110 ft. below the producing level of the Vaught tract oil wells just to the east, has been obtained by the Magnolia Petroleum Company in its N. V. Ellison well, southwest of Desdemona, Texas, between the townsite and Gorman, Texas.

Carl B. Wyckhoff Promoted to Superintendent of Manufacture

Carl B. Wyckhoff has recently been made superintendent of manufacture of the Grand Rapids (Mich.) Gas Company. Mr. Wyckhoff took up his work two years ago, in the fall of 1917, with the Grand Rapids Company, during which time he was assistant superintendent of manufacture. Prior to this he was for eleven years superintendent of manufacture for the Mobile (Ala.) Gas Company.

Mr. Wyckhoff went with the Mobile Company in 1906, where for the first six months of his time there he was superintendent of distribution. He left the Mobile Company in 1917 to become assistant superintendent of manufacture for the Michigan Light Company in Flint, where he was in direct charge of their new oven plant. He only remained here a few months, however, resigning to take up the work with the Grand Rapids Company.

Company Sues City for Correction in Its Assessment

The Pavilion Natural Gas Company, of LeRoy, N. Y., through its attorney, James M. E. O'Grady, of Rochester, has instituted an action in supreme court against the town assessors asking for a correction in its assessment, reduction in valuation, etc.

General Manager J. S. L. Purdy and attorney of LeRoy recently appeared before the assessors and a reduction from $15,000 to $12,000 was granted.

The company claims errors in assessment, depreciation in the value of the mains, etc., and is topping off its many grievances by petitioning for a raise to 75 cents a 1,000 cu. ft. in the price of gas.

P. G. & E. Extending Mains

The Pacific Gas & Electric Company plans to extend its gas mains in the residential section of Woodland, Cal., to meet the demand for fuel and heat following the increasing population of the expanding residential sections.

More Inquiry into Heating Plant Operation

Officials of the Springfield Gas & Electric Company, of Springfield, Mo., have been requested by the members of the Missouri public service commission to furnish more information concerning the operation of the heating department of the company which furnishes about 50 buildings in the city with heat.

In the first hearing of the commission on the steam heating rates here, it was found that the company was maintaining the steam heating department at a great loss.

New Rates Effective in Pennsylvania

Notice of increased rates for gas has been filed with the Public Service Commission of Pennsylvania by the Philadelphia Suburban Gas & Electric Company, effective in the Phœnixville district Oct. 15. The new rates will affect Phœnixville, Spring City, Royersford and Mont Clare, Pa.

Each step in the rates for gas consumed through plain meters will be increased forty cents. The prepayment meter rate is changed so as to deliver 140 cu. ft. of gas for 25 cents.

Standard Gas Pays Dividend Debt

All the back dividends on Standard Gas & Electric Company preferred stock, amounting to 13 per cent, were ordered paid by the directors in common stock at par, and stock has been mailed to the preferred stockholders. A statement by President H. M. Byllesby accompanying the dividend announcement says that "in the first six months of 1919, without regard to any earnings accruing from its interest in the Shaffer Oil & Refining Company, your company has earned at the rate of over 7 per cent per annum upon its common stock.

"In view of the now rapidly growing position of your company, it was deemed best to pay the accumulated dividends in this manner, rather than to deplete the company's cash resources at a time when it has large and increasingly profitable employment of its funds," the statement adds.

"From the earnings and general condition of your company and the rapidly expanding growth of its newly acquired oil and other interests there appears no reason why the earnings available for the common stock should not rapidly increase and place the value of the common stock of Standard Gas & Electric Company substantially in excess of par."

Wisconsin Commission Authorizes Continuing of Emergency Rate

The Wisconsin Railroad Commission has authorized the continuance of the Beaver Dam Fuel & Light Company, of Madison, Wis., emergency gas rate charge of $1.70 for the first 2,500 cu. ft. of gas used. The emergency rate was granted Aug. 24, 1919, and was continued until the company asked the commission to make the increase permanent.

The commission valued the gas plant of the Beaver Dam Fuel & Light Company at $100,000. A little less than a 6 per cent raise is guaranteed the company by the new rate.

May Shut Off Supply

The Coshocton (Ohio) Gas Company states that unless the city council takes immediate and favorable action in increasing the gas rates here the company may shut off the supply of natural gas this winter.

Binghamton Company Files Rate Reduction with Commission

An announcement has been filed with the city clerk of Binghamton, N. Y., by the Binghamton Gas Works that application has been made to the Public Service Commission of New York for permission to change the rates charged for gas. The new rates will be a reduction of a little more than 4 per cent.

This is in accordance with an agreement between the company and the city officials whereby Binghamton gas rates are to be reduced five cents on each 1,000 cu. ft. of gas. This will bring the price of gas down to $1.15 a 1,000 cu. ft. after Nov. 1.

Massachusetts Gas Company Earnings

The combined net earnings available for dividends of the subsidiary companies of the Massachusetts Gas Companies for September were $359,910, a decrease of $44,624, or 11.03 per cent, compared with the corresponding month a year ago.

Company Wants to Discontinue Operating

The Fort Plain Gas & Electric Company claims it has operated its gas department in Fort Plain at a deficit in operations since 1912, running from a deficit of $650 in that year to $2,198 in 1918, and therefore it desires to discontinue operating. That was the substance of its argument before Chairman Hill of the Public Service Commission, Second District. Following complaints from Fort Plain gas users that the company intended to discontinue its gas service, the company was required to appear before the commission.

6,000,000 Cu. Ft. Gas Holder Put Up in Baltimore

An immense gas holder has been completed by the Consolidated Gas Electric Light & Power Company. It cost $500,000 and will be an important factor in enabling the corporation to meet the increasing Baltimore demand. The structure is 218 ft. high and 219 ft. in diameter, with a capacity of 6,000,000 cu. ft. About 5,000,000 pounds of steel were assembled for the holder and float in a reservoir containing 2,000,000 gallons of water.

Standardization Committee Would Regulate Location of Indexes in Catalogs

At a recent meeting of the National Association of Purchasing Agents at Philadelphia, Pa., the matter of locating the index in catalogs was freely discussed. The following quotation from the report of the Standardization Committee explains the attitude of the organization:

"Much confusion now exists in connection with the placing of the index in bound catalogs. Some place it in the front of the book, others in the back, while still others place it in the center. There are arguments in favor of each place, but in view of the custom which has been so long common, whereby a much larger percentage of catalog manufacturers place the index in the back of the book, the committee feels that this should be made a standard practice."

"Committee recommends that catalogs be filed numerically according to size, catalogs to be indexed on individual cards for each vendor, vendor's cards to be filed alphabetically. Where vendors issue several catalogs on different lines of goods, index card to furnish clue to the goods contained in each catalog.

"Committee also recommends that catalogs of book type be filed on shelves. Pamphlets or booklets may be filed either on shelves or in vertical file drawers. If filed on shelves, gummed stickers should be applied to the back edges, projecting about one-fourth inch, and numbered on the projections, the tabs to be staggered so that the numbers on each may be readily seen. If filed in drawers, drawers of legal, letter bill or document size may be used.

Plans for Mixed Gas Plant Under Consideration

Judge Daniel J. Kenefick, attorney for the Iroquois Natural Gas Company and the William J. Judge (manufactured) Gas Company, both of Buffalo, N. Y., recently stated that there is a plan under consideration for mixing manufactured and natural gases for city use. This plan is in effect in Los Angeles, Cal., but has never been tried where extreme weather conditions prevail.

When asked whether the natural and manufactured gas companies would merge if the plan were put in operation, Judge Kenefick answered that it is highly probable that they would take such action, but stated, however, that there is no likelihood of this plan going into effect this winter, as it would necessitate the building of a $2,000,000 plant.

City Attorney Frederick C. Rupp, who is handling the gas situation, said that the mixed gas plans is a necessary one.

GAS has been adopted as Fuel in Every Porcelain Enameling Plant established in Chicago during the past three years
BECAUSE:
Gas contains no chemical constituent which adversely affects the work—All other fuels do.
Gas Enameling Furnaces need no Muffle—Maintenance thus reduced to the minimum.
Gas admits of perfect temperature control—Risk of ruining work by overheating eliminated.
Progressive Manufacturers use GAS for Japanning Enameling Lacquer Drying Rust Proofing Galvanizing Sherardizing Tinning
Successful Founders and Tool Makers use GAS for Baking Cores Drying Ladles Cupola Lighting Forging Annealing Hardening Tempering
Thos. A. Kesler Co. have been using Gas for years in their Enameling Plant. They Manufacture Barber's Furniture and Lavatory Fixtures.
The high quality of the Kesler Products is the best evidence of the perfection of their manufacturing processes.
GAS, THE IDEAL FUEL, IS USED THROUGHOUT THEIR FACTORY

THE INSIDE PAGES OF INDUSTRIAL BULLETIN NO. 5

Carolina Light & Power Makes $75,000 Improvements and Extensions

The Carolina Power & Light Company is spending $75,000 in improvements at its plant in Raleigh, N. C. These improvements consist of a $60,000 water gas set and new pipe line extension to cost approximately $15,000.

The water gas set will give increased capacity for gas making, and will enable the company to regulate the gas output. With this addition to the plant the company will be able to manufacture a standard grade of gas regardless of the quality of coal which might be furnished by its coal dealers. This addition will cost between $50,000 and $60,000.

It is also improving the distributing system by the installation of a new 12-in. gas main.

The coal gas plant at Raleigh is a new one, having been built only five years ago. It is a modern and up-to-date one; the best made at the time it was installed. During the war the plant had, and even now has, considerable difficulty in getting a proper and adequate supply of coal for making good gas. Quite recently it received a very poor supply of coal which forced it to put out an inferior product of gas, as no other supply was available at the time. The Government established certain zones from which various companies were forced to purchase their supply of coal. The Carolina Power & Light Company was put in a zone from which it had never purchased coal before and was prohibited from buying in the best gas coal district. These restrictions have now been removed, and it has just now begun to receive coal which is known to be excellent in quality. With the new additions the plant will have one of the most up-to-date plants in the country.

Election of Offices Held at Cambridge Company Meeting

The following officers were elected at the annual meeting of the stockholders of the Cambridge Gas Light Company, held on Tuesday, Oct. 28, 1919:

Directors.—Daniel G. Tyler, Stanley B. Hildreth, George A. Sawyer, Arthur C. Whitney, Edward W. Hutchins, Albert M. Barnes, George S. Wright. Treasurer, Vinton W. Mason. Clerk, Karl S. Barnes.

At a subsequent meeting of the board of directors, Albert M. Barnes was elected president and Karl S. Barnes vice-president.

Chicago Selling Electric Washing Machines with Gas Equipment

Commercial departments of the Peoples Gas Light & Coke Company report business booming during the month of October. The wash machine section says that at present over 50 per cent of Thor washing machines are sold with gas burners connected. The gas heated electric washer has become so popular that six of the best sellers have adopted it as their standard equipment. It is estimated that 100,000 electric washers will be sold in Chicago this year, and that fully one-half of them will have gas equipment. A washing machine gas burner consumes about 300 cu. ft. of gas per month; a very small amount regarded as a unit, but multiplied by 50,000 it assumes proportions well worth of notice for the gas company.

To date this year the water heater section of the Peoples Company organization can report an increased gas consumption of over 115,000,000 cu. ft. from the water heaters that have been sold, and the amount of business the section is doing is increasing daily despite the fact that it is generally considered an off season for this line of trade. This success is attributed to a certain extent to the co-operation between the company and the plumbers of the city. The work of the architects and builders' section of the company also proves of great help in the fact that automatic water heaters are specified for factories and buildings.

The house heating section during the week ending October 31 reported over $11,000 worth of business, all of which will be a great help in swelling the growing gas consumption of the company's clients.

Three Companies Receive Authority to Merge

Three Massachusetts gas concerns —the Framingham Gas, Fuel & Power, Natick Gas Light and West Boston companies—have been granted authority by the Gas & Electric Light Commission to merge under the name of the West Boston Gas Company, with an aggregate capital of $279,600. The floating debt of the three companies will be refunded in part by an issue of $30,000 first mortgage 6 per cent bonds, which the commission has approved.

Increased Rates Do Not Mean Increased Revenue

W. J. Morgan, general manager of the East Ohio Gas Company in Canton, Ohio, said, in speaking of increased rates:

"Contrary to general opinion, the increased gas rate does not mean increased revenue to the gas company. It is generally the reverse, because of the curtailment in the amount of gas consumed."

Rome Company Requests Another Bond Issue

The Rome, N. Y., Gas, Electric Light & Power Company has made application to the Public Service Commission, Second District, for permission to issue $266,000 in 5 per cent 30-year first refunding mortgage bonds for reimbursing the treasury for expenditures from Dec. 31, 1916, to Aug. 31, 1919. The commission will give immediate consideration.

East Boston Company Asks Further Increase

The East Boston Gas Company has petitioned the Gas Commissioners for leave to increase the price of gas from $1 to $1.10 per 1,000 ft. This will be the third raise in a year if it is granted. The company serves East Boston and Chelsea, Mass.

"Dry Hole" Making 1,000,000 ft. of Gas

The Magnolia N. V. Ellison, near Dallas, Tex., previously reported as a dry hole, has developed into a gasser and is now doing 1,000,000 ft. This well showed but slight traces of oil during the process of drilling.

P. G. & E. Declares Regular Quarterly Dividend

At a meeting of the directors of the Pacific Gas & Electric Company, held on September 30, the usual quarterly dividend of $1.25 a share, declared on the common stock, payable Oct. 1 to stock of record Sept. 30.

THE BOSTON CONSOLIDATED GAS COMPANY'S output for September was 511,444,000 cu. ft., an increase of 3.9 per cent compared with the corresponding month a year ago.

$60,000 New Plant Under Construction at Muskegon

Following directly upon a shutdown at the Muskegon Heights Gas Company plant, in Muskegon, Mich., which was necessitated by leaking flues in the generating plant, the company, through its president and general manager, A. E. Dunn, announces that plans are now nearly completed for a complete renewal of equipment for making and storing gas, and for additions to the plant that will treble its present capacity and eliminate all possible danger of a break in the service such as now is leaving the Heights section of Muskegon, entirely without gas for cooking and lighting purposes.

For more than two months the directors and officers of the company have been working on the plans for enlarging the plant. It is stated that $60,000 will be spent in installing the new equipment and in laying about six miles of main in different parts of the city.

The materials are already ordered for the new addition to the building, which will be 36 by 50 ft, in dimensions. It will be constructed of brick and steel, and will be two stories high. The steel and other materials are already ordered for the new holder and compressor units that will give three times the capacity that the plant now has. A new generator will be installed that will supplement the one now being repaired and will give the plant twice the generating capacity that it has formerly had.

With the installation of the new equipment sufficient storage units will be added to allow a vast quantity of gas to be stored, so that in times of great drawings on the mains and in cases of breakdown there will be sufficient reserve pressure to supply the consumers without a break in service when necessary repairs have to be made.

American Legion Post Named for Chicago Company

A drive has been opened by the Peoples Gas Light & Coke Company to make the American Legion post named for the company one of the biggest, best and most active in the city. A drive has been opened for enrollment, and company statistics show that to date 338 employees returned from Government service have been re-employed by the company.

Interesting Increases in Oil Prospects in Oregon

The splendid indication of oil seepage found lately on various properties in the Willamette River Valley in Oregon continues to attract general attention and interest in that part of the country. The Willamette Valley was once an inland lake and it is thought for that reason that oil is there the same as it is under the shores of the Pacific at Los Angeles.

The bank in which these oil sands are found is very precipitous. The course of the river is directly toward the bank for some distance, then veers sharply in another direction. During the high water of last winter the current struck the bank squarely and caused a big landslide, which exposed this sand deposit, from which trickles the oily water. This forms in a pool below, and on this pool a thick oil scum may be skimmed off. The entire scum of oil may be removed and will quickly form again. The taste and smell of this water is exactly like kerosene, and if a stick be placed in the water and allowed to dry the smell will be retained for a long time.

Below is a picture showing the flame on a gas jet in the laboratory of Cecil Riggs. This is the flame from the gas obtained from a well on Mr. Riggs' place south of McCoy, Yamhill County, Oregon.

CECIL RIGGS IN HIS LABORATORY SHOWING FLAME FROM GAS JET OBTAINED FROM GAS WELL ON THE RIGGS PLACE IN YAMHILL COUNTY, OREGON

Chicago Company Executives Active in Safety Organization

The Peoples Gas Light & Coke Company is taking another big step forward in the fight for safety among its employees, the heads of the commercial section of the company's organization, this time coming to the front with the following letter:

"The success of the Commercial Department Section of the Safety Organization of our company depends upon the close co-operation of yourself and your co-workers.

"Therefore we trust you will immediately bring to the attention of those employees who come under your supervision the necessity of their assistance and the possibilities there are to minimize the chances for accidents in their daily routine of work.

"The most trivial things will sometimes turn out to be serious unless immediate steps are taken to eliminate them, so please emphasize the necessity for your employees to always be on the lookout for ways and means to not only prevent accidents, but to increase the safety of our own employees as well as the public.

"Upon the discovery of anything that can be classed as the least bit dangerous, whether connected with the operations of the Commercial Department or any other department of the company, a detailed report should be forwarded to me immediately, with recommendations of how to remedy same. This report and suggestions should be dated and signed by the party issuing same, so they can secure credit for being *'on the job.'*

"We are sending with this letter, copies of the *Safety Bulletin*, which is issued each month. Please see that each one of your employees secure a copy.

"The next meeting of the Commercial Department section will be held in the library, and it is very essential that you be present.

"Enclosed find minutes of our first meeting.

"Trusting you will show the same interest in this, as you have always shown in anything pertaining to the perfection of the Commercial Department.

"Sincerely yours,
"CHARLES A. LUTHER,
"Chairman,
"Commercial Section."

Buffalo Company Will Make Connections When Mains Are Laid

The Iroquois Natural Gas Company, of Buffalo, N. Y., will continue to make gas connections to property in streets where gas mains are laid, according to the terms of a temporary injunction which has been granted by Justice Pooley in Supreme Court. The court rules that gas connections must be made and service supplied as the company has supplied its regular customers prior to the order. The order was granted upon the application of the Public Service Commission, Assistant City Attorney Rupp and Henry W. Killeen, the latter representing property owners.

31,000,000 ft. Gasser Discovered in Petrolia Field

A 31,000,000-ft. gasser has been brought in on the land of N. H. Martin, of the city of Dallas, Tex., near the Petrolia field, in a well that the Texas Company was drilling for oil. This is the first gas well of any size to be reported in many months in the Petrolia field. It was found at a depth of 1,730 ft. The Texas Company has disposed of the production to companies supplying gas for fuel.

Iroquois Company Argues It Can't Give Service at Present Price

Unless rates are raised, Buffalo faces this winter the most serious shortage of natural gas in the history of the city, according to statements brought out in an action in special term of Supreme Court to compel the Iroquois Natural Gas Company to make new connections.

The action was brought by John F. Burke, house builder, with Frederick C. Rupp representing the city, and Judge Ledyard P. Hale, representing the public service committee. Daniel J. Kenefick represented the Iroquois Natural Gas Company.

In arguing against the extension, Judge Kenefick pointed out that last winter, which was one of the mildest in years, there were times of great gas shortage. Of the gas used here last year, 73 per cent came from Pennsylvania. Through a new contract one-fifth of this supply will be diverted to other fields.

In the course of argument it was stated that other cities are paying 35 cents per 1,000 cu. ft. If prices here were raised to the same level, the gas company could compete with other companies buying gas, and obtain an adequate supply to meet the demands of all customers, the company contended.

Monster Chimney Fifty Years Old Brought to Earth

One of the oldest chimneys in the State of Massachusetts, one that has been standing for many years close to the gas tank near Commercial Street, North End, was brought down to earth. The chimney was the property of the Boston Consolidated Gas Company, and had been in use more than half a century. It rose more than 218 ft. in the air.

A short time ago, the Thomas A. Edison Company, Inc., building wreckers, of South Boston, was given a contract by the gas company to raze all of its old brick buildings standing at the corner of Prince and Commercial Streets and most of them are now demolished.

It took six men under the supervision of a foreman three days to bring down the monster chimney. After many bricks had been taken from the foundation and large timbers had been put up for braces, the wood was set afire and the huge pile collapsed, bricks flying in all directions.

Estimated Receipts of a Municipal Plant

The estimated receipts from the municipal gas plant of Palo Alto, Cal., for the fiscal year, 1919-20, are given as $82,210 in the budget adopted by the city council. The detailed figures on estimated cost of construction, maintenance and operation of the gas plant follow:

Gas Distributing Construction—	
Service Construction:	
Purchase of meters and installing services	$ 2,000
Gas Mains:	
Extending mains where service may be required	2,000
Total	$ 4,000
Plant Operation—	
Purchase of gas	$55,000
Gas Distributing System—	
Maintaining meters, regulators and services	$ 600
Maintaining mains, drips and tanks	300
Supplies and miscellaneous work	100
Operating distributing system	3,000
Rental of gas mains	750
Total	$ 4,750
Office and Accounting Expense—	
Meter reading and making out bills	$ 1,500
Telephone, printing, stationery	150
Engineering department	660
Portion salary deputy auditor	400
Portion salary treasurer	150
Portion salary clerk	360
Portion salary stenographer	276
Rents	240
Industrial insurance	90
Sundries	300
Total	$ 4,126
Payment to general fund in lieu of taxes	1,500
Transferred to the general fund to compensate for tax levy to pay gas bonds and interest	4,655
Gross receipts over legalized expenditures transferred to general fund	8,179
Total	$82,210
Estimated Receipts from Gas Plant—	
Gas sales to consumers	$81,500
Penalties	10
Miscellaneous revenue	100
Gas service connections and main extensions	600
Total	$82,210

Brooklyn Company Authorized to Issue $2,000,000 Bonds

The Public Service Commission has issued an order authorizing the Brooklyn (N. Y.) Union Gas Company to issue $2,000,000 face value of convertible debenture bonds to be dated November 1, 1919, and to mature November 1, 1929, bearing interest at not to exceed 7 per cent a year, payable semi-annually.

The bonds are to be convertible at the option of the holder into stock of the company after five years, on the basis of one share of $100 for each $100 par value of the debentures.

Satisfactory response made by the stockholders of the Brooklyn Union Gas Company to the offer made them to subscribe to the company's new issue of $2,000,000 7 per cent debentures. Funds derived from sale of the bonds are to be used to reimburse the company for money expended between Feb. 1, 1914, and Jan. 31, 1919, for acquisition of property construction, completion and extensions to the plant and distributing system. The total so expended was $2,802,232.

Pacific Oil & Gas Brings in 25,000,000 Cu. Ft. Gasser

The Texas and Pacific Oil & Gas Company's well on section 84 of the Stuart ranch has brought in a big gasser at a depth of 1,626 ft. Many who visited the well said the gas is flowing over 50,000,000 ft., but it is more conservatively estimated that there is a flow of 25,000,000 cu. ft. daily. This well is 5½ miles west of north from Strawn, Texas, and on a direct line of the Caddo development toward Strawn.

700,000 Ft. Daily Shortage Predicted

William S. Frey, manager of the Logan Natural Gas & Fuel Company, of Lancaster, Ohio, recently made a statement that the town of Bucyrus, Ohio, faces a shortage of 700,000 ft. of gas daily next winter.